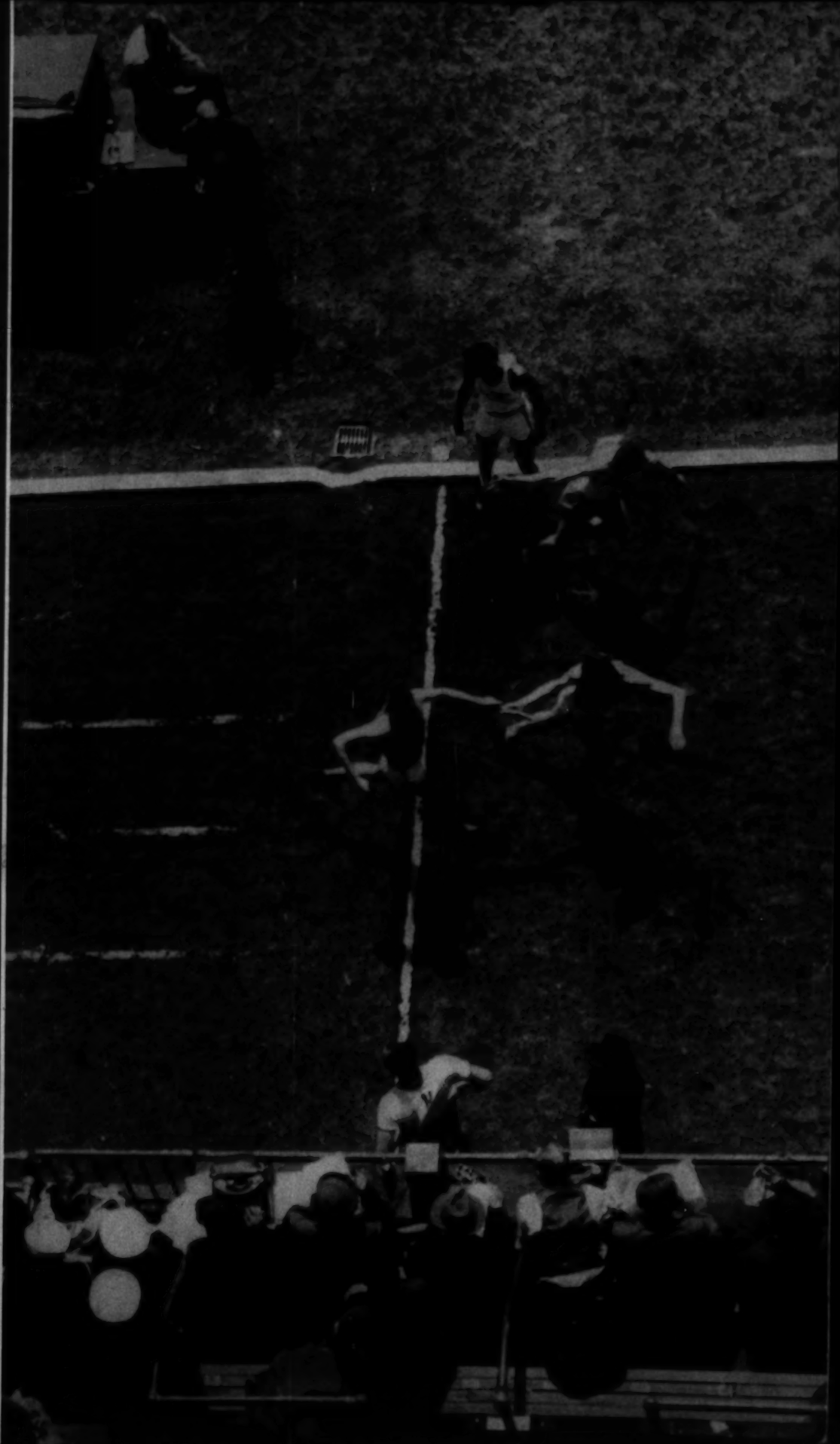


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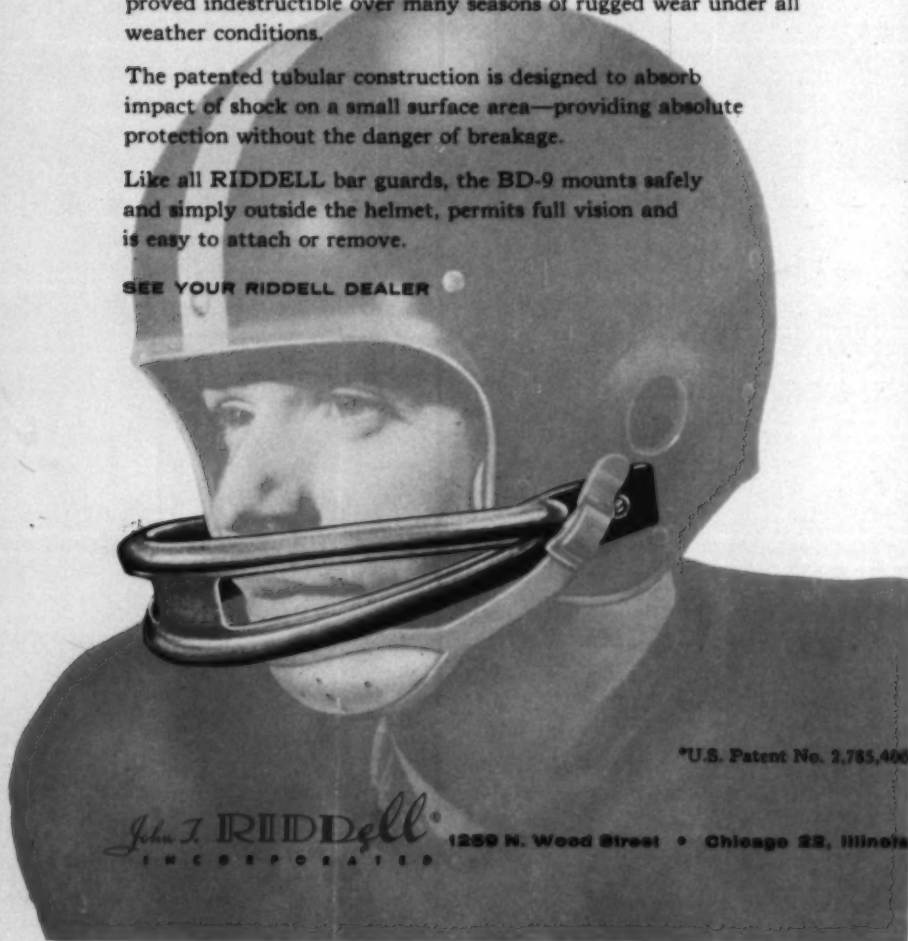
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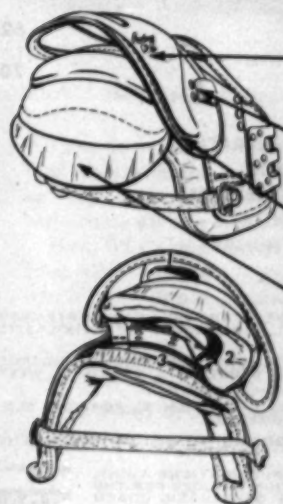
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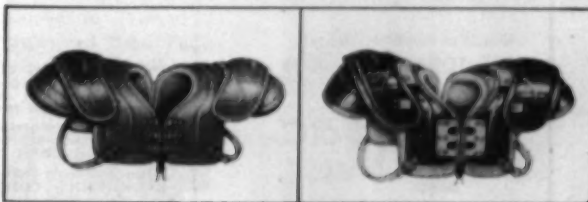
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VOLUME 28 • NUMBER 8 • APRIL 1959

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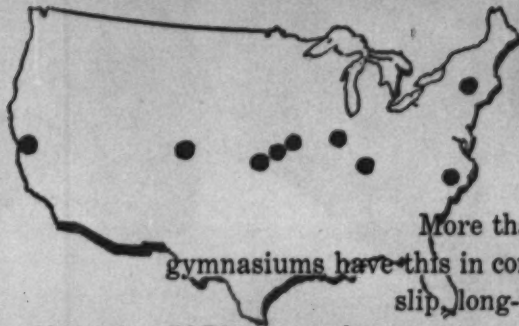
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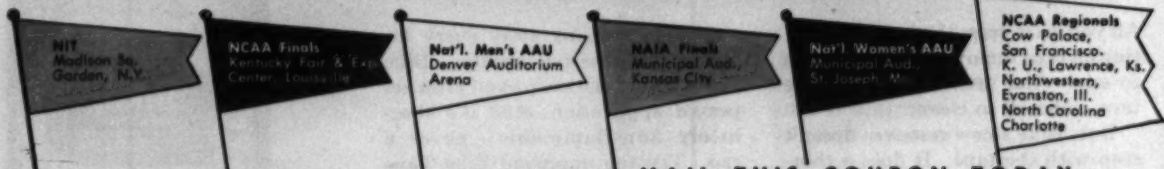
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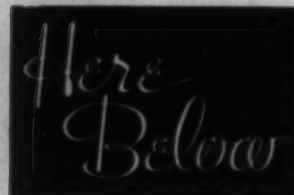
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"Sell" them on defense!

UNLIKE most roundball coaches, to whom defense is a dirty word invented by subversive old basketball lawyers, our football masterminds rarely lose their sense of proportion. Even when they're up on Cloud 66 designing some newfangled attacking missile, you can never catch them with their defenses down.

That's why the grid game retains such balance year after year. Offense may streak ahead for a year or two, but defense will invariably catch up. A Bud Wilkinson, a Bear Bryant, or a Ray Graves will always pop up with some antidote for the particular offensive "poison" endangering the balance of power.

Let's face it: As psychologists and sports technicians, football coaches are positively peerless. They realize that all kids love to play offense but that they have to be sold on defense. And who can do the selling job better than these wonder Jung-kinder?

Take Bud Wilkinson, for example. His Oklahoma teams are famed for their remarkable firing power. But do you know that his coaching accentuates defense? Let him tell it:

"We pick our team for defense. . . . We consider defense the heart of the game. We tell our boys anyone can play offense. You know what the play is, you know when the ball's going to be snapped, you know what you're supposed to do, you have all the advantages.

"But on defense you know nothing. We tell our boys it takes real athletes, real men, to be good defensive players, and we give all our credit to the defensive play. We let the newspapers take care of the offensive credit.

"We start out on the assumption that we're not going to let the other team score. Maybe we won't either. The game may be a static thing, a 0-0 tie. But if we tie all the games, it's unlikely they'll fire the coaches and not give them a chance to do

something about the offense next year."

Of such salesmanship is winning football forged.

THOUGH we should know better after all these years, we still place a childlike faith in the reliability of our newspapers. So that when all of them put the blast on our State Dept. for sending an unrepresentative team to the world's amateur basketball championships in Chile—where we were scalped by the Russians—we lost no time joining the punching party.

Soon after our left hook appeared in print, Dan Ferris, the gracious gentleman of the Amateur Athletic Union, phoned us to set the record straight:

First, it was the AAU rather than the State Dept. that was responsible for the selection of the American team.

Second, this was not a "fourth-rate" team. It was the selfsame club that had won the 1957 national AAU title. Getting into shape raised some problems and, to compound the misery, the two best players were rendered *hors de combat* the day before the team left for Chile. At that, the team won 9 of its 12 games in the tourney.

Third, when we originally accepted the invitation to compete, the tourney had been scheduled for October, at a time we could send an impressive representative. After we accepted, the tourney was moved back to January.

Fourth, we withdrew our entry when the new date was announced. But the Chileans literally begged us to reconsider—informing us that a world tourney couldn't be considered official without a U. S. representative.

Fifth, by entering a team despite all these handicaps, we made a lot of friends among our Latin American neighbors.

You can see how the entire affair

hoisted both our State Dept. and AAU upon the horns of a dilemma. If we sent an unrepresentative team, we'd lead with our chins in the propaganda battle with Russia. If we sat out the tourney, we'd be letting down our Latin American friends.

RESULTS of the recent Gallup Poll on adult sports interests must have produced a sense of fulfillment among the thousands of physical educators tolling in the gym and recreation "vineyards."

For years and years they've been preaching the gospel of carry-over activities, that gym and recreational programs should emphasize activities that can be played in later life—rather than the heavy sports that are useless for adult recreation.

The Poll of adult interests clearly proved the validity of their argument. The carry-over activities won in a Gallup.

SPORTS PARTICIPATION OF ADULTS IN 1958

% Participating at Least Once	Total No. of Adults
33% Swimming	33,000,000
32 Fishing	32,000,000
32 Dancing	32,000,000
18 Bowling	18,000,000
16 Hunting	16,000,000
11 Baseball or softball	11,000,000
8 Golf	8,000,000
7 Badminton	7,000,000
6 Ice skating	6,000,000
6 Pool or billiards	6,000,000
5 Horseback riding	5,000,000
4 Roller skating	4,000,000
4 Tennis	4,000,000
4 Volleyball	4,000,000
3 Skiing	3,000,000
36 None of these	36,000,000

The moral (there always has to be one!) is simple enough: Let's keep offering bigger and better variety programs for our athletically talented youth. But let's build even bigger and better programs to prepare everyone for a healthy recreational future.

tops

from head to toe-

For assured protection—for smart appearance, coaches everywhere know there is no finer football equipment than that which bears the Wilson label.

HELMETS. The answer to the problem of head protection... Wilson helmets of Etholite plastic—specifically compounded for use in helmets. Exclusive composite air-lite cellular and Latex Foam rubber.



SHOULDER PADS. Only Wilson offers the T-Square design. Perfect protection for all vital shoulder areas, yet affords complete freedom of movement. Padded with "high shock" Ensolite. T-Square design provides perfect, positive contact for blocks and tackles.



RIB PADS—HIP PADS. Here's the ultimate in blocking and tackling protection, for here are pads that stay in place. They're "motion-molded" SHOK-GARD® to give protection when the player is running at full speed as well as when he's standing still.



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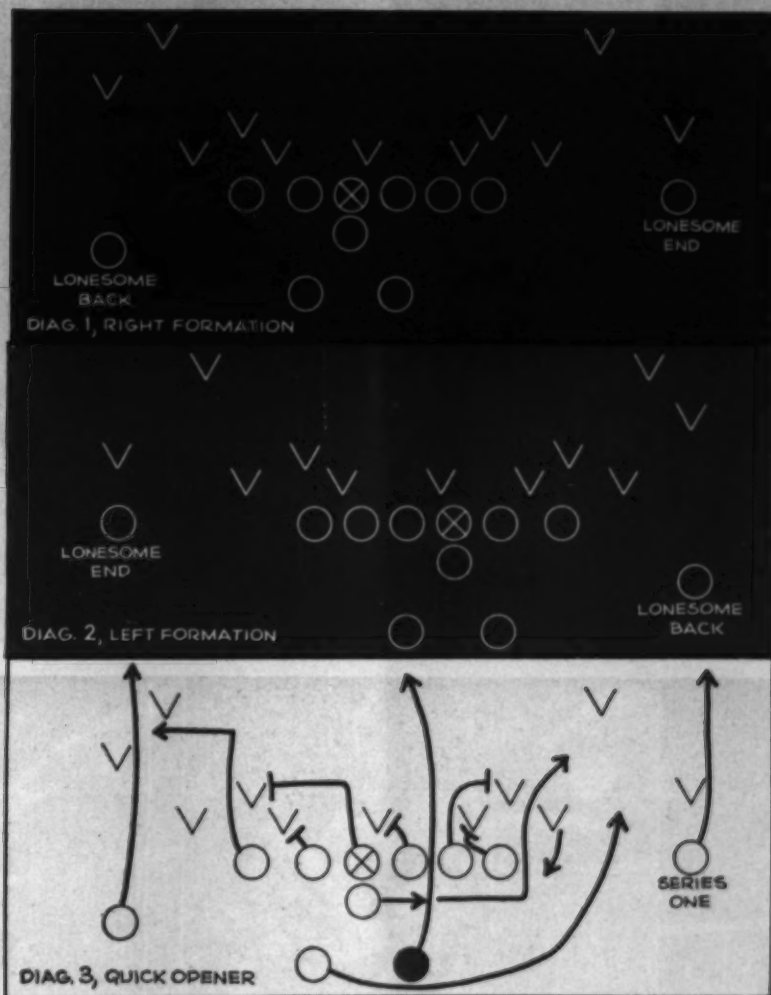
FOOTBALL SHOES. The last that's first on every field... it's Wilson's, of course. Goodyear Welt construction affords lighter weight, greater flexibility, and perfect balance.



And Coach, if you haven't received your copies of the 1959 Wilson Football Uniform and Equipment brochures, drop a card to the School and College Dept., River Grove, Illinois.

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By JOHN M. AUSTIN, Perry (N. Y.) Central Schools

Adapting the Lonesome End for High School Play

UNDoubtedly the most exciting departure from conventional offense occurred with the appearance of Army's "Lonesome End" last season. Sports pages discussed this new formation enthusiastically all year, and the experts flocked to the stadium to get a first-hand look.

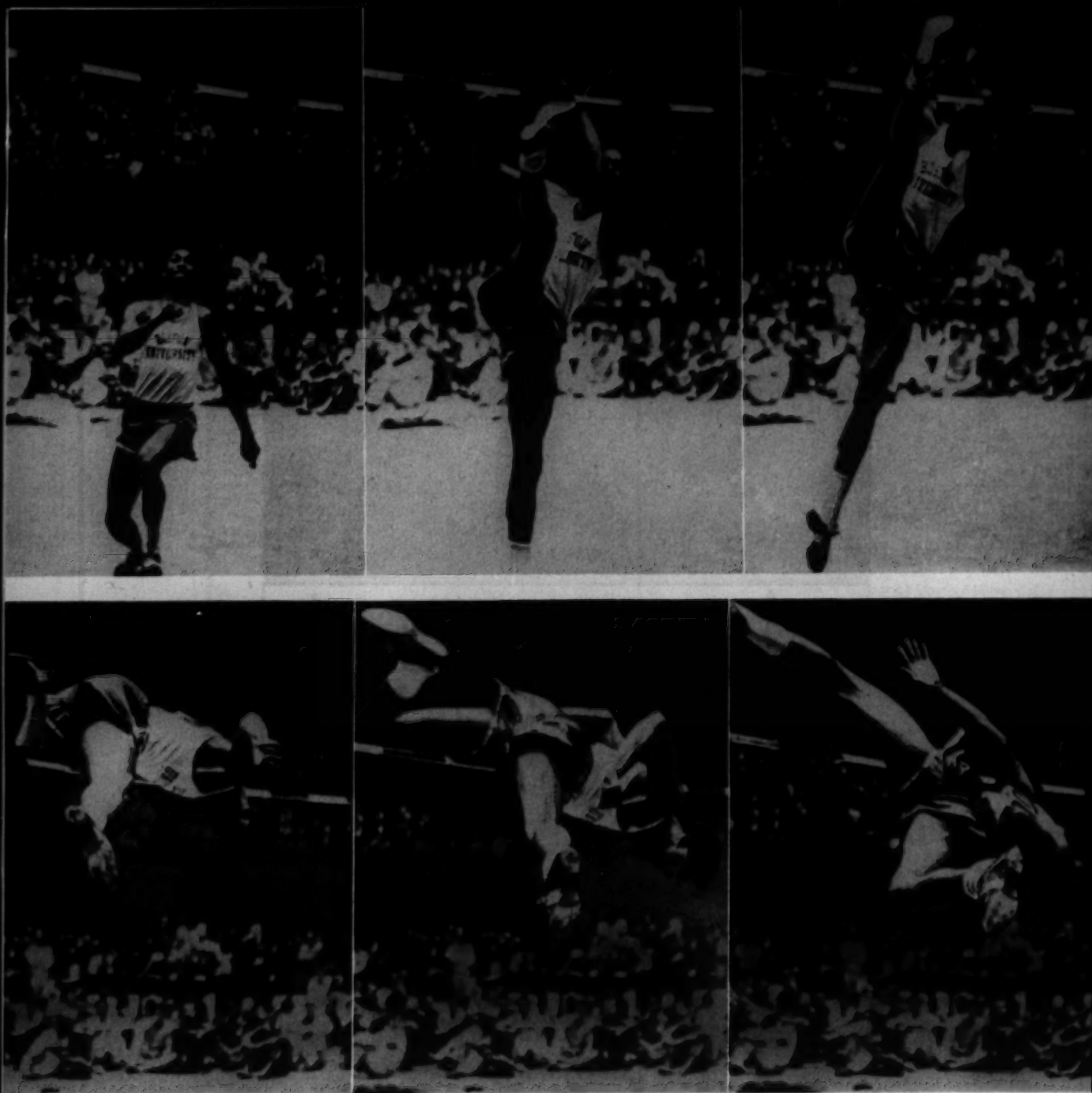
Guessing games sprung up all over the country on how the non-huddling end received his signals. The secret was well-guarded during the season and only revealed during

the winter. (It was done by way of the quarterback's foot positioning.)

The simple yet effective procedure may stimulate other coaches, especially those whose opponents have the physical edge on them, to adopt "Lonesome End" systems of their own.

The reason is quite obvious. The record of the "Lonesome End's" inventor stands as a tribute to a coach whose knowledge of the game and daring overcame the scarcity of his

(Continued on page 66)

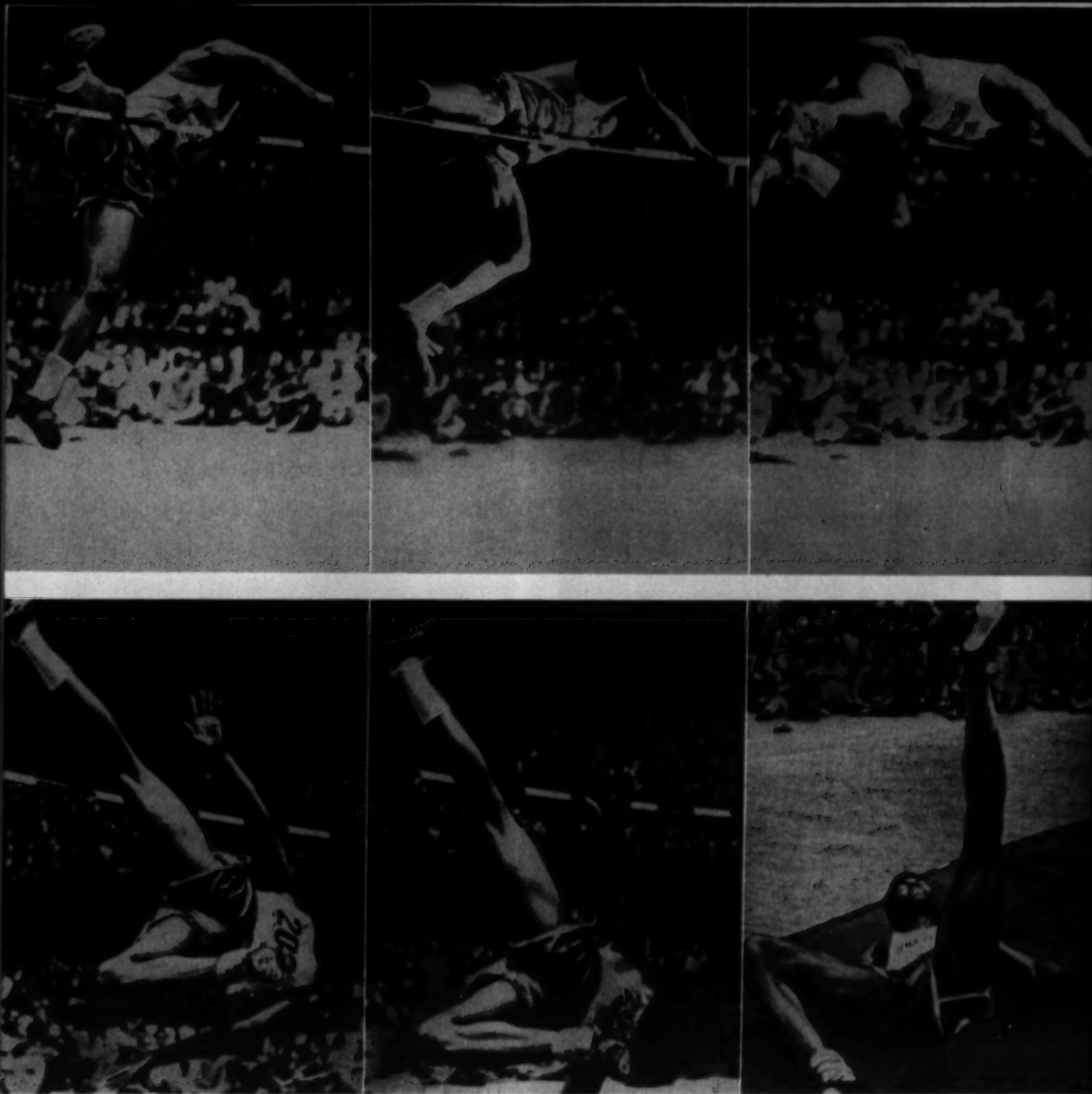


The 7' 1 $\frac{1}{4}$ " **World-Record Breaking** **High Jump**

by John Thomas

EVERY half decade or so, some athlete comes zooming out of outer space to electrify the track and field world—a Warmerdam, an Owens, an O'Brien, a Zatopek, etc.

Latest whiz to cross the horizon is Johnny Thomas, magnificently proportioned freshman high jumper from Boston University. A Scholastic Coach schoolboy All-American from Rindge Tech in Cambridge, Mass., the wunderkind soared into the record books on February 21 by jumping 7-1 $\frac{1}{4}$ —bettering Yuri Stepanov's world mark by $\frac{1}{8}$ inch. The



Photos by Don Rice, N. Y. Herald Tribune

actual jump is shown in these remarkable pictures.

How does he do it? His head coach, Doug Raymond, asserts: "The things that make Johnny great are a terrific lead leg (just look at pictures Nos. 2 and 3!), tremendous strength, willingness and ability to work like a construction laborer, and his height."

The boy derives his great strength from intensive practice in jumping, hurdling and—weight training! Lying on his back, he'll raise 250 to 300 pounds with his legs. Then, working with 70 and 80-lb. weights,

he'll hoist three or four times in a bench press and as many more times in the military press.

The heavy muscle building program is executed under the supervision of Ed Flanagan, Boston U. field-event coach.

"I call his jumping style a straddle roll," Flanagan vouchsafes. "It amounts to this—stride, gather, kick, bounce, relax, and roll. John takes seven strides from a 37° angle approaching from the left.

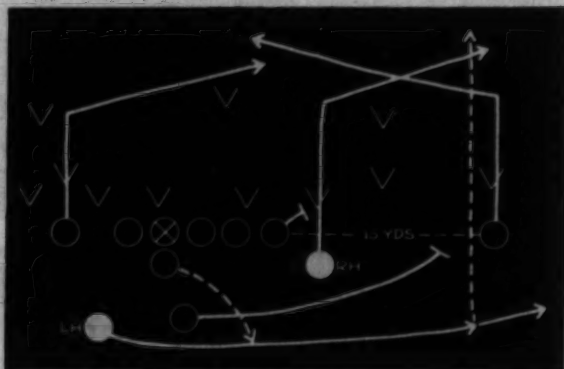
"His first four steps are easy. If you close your eyes and listen, they sound staccato—sharp, clear and

rhythmic. Over the last three steps, each stride gets longer. The next to the last step is 8½ feet long.

"After that stride, Thomas puts on the brake and springs off his left heel. The heel—that's where all the spring comes from. The toes just release what the heel and leg have done.

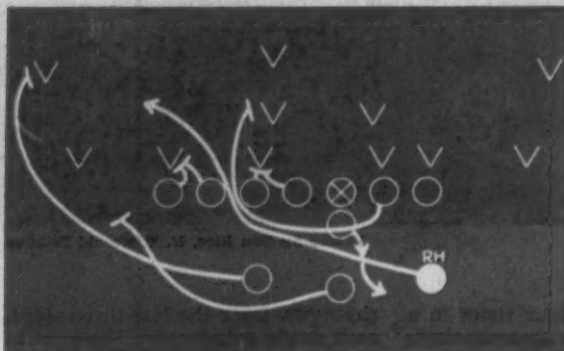
"Then comes the kick with the right foot—over 7 feet—and he starts up. He gets a secondary hip lift as though he were being sucked upward. If the kick is strong enough, the roll comes with it almost naturally."

1958 TOUCHDOWN SCORERS



CLEVELAND BROWNS END-AROUND ►

QB fakes to FB, who fakes buck and blocks in line. Then QB rolls to right behind RH. As slot man and LE go down as for pass, RE steps forward as on pass play, then cuts back and runs toward QB, taking ball and skirting left end—behind blocking wall by line.

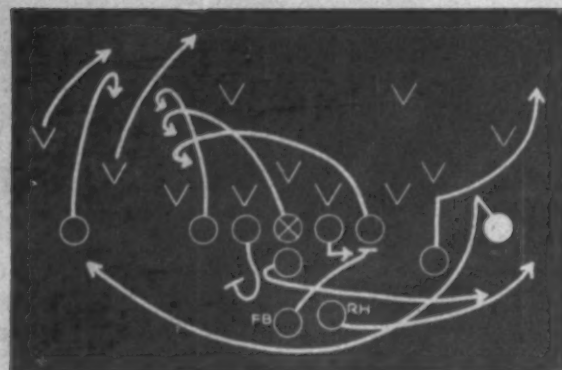


USC BELLY-OPTION PASS ►

RE blocks hard, RT blocks down, RG pulls, FB drives off tackle for short zone. Close back drives across face of corner man upfield to block and then to corner. LH starts as option man, swings wide and turns upfield as receiver. QB goes down line, fakes to FB and turns corner as if to run or drops back to throw. LE must get open late according to HB play.

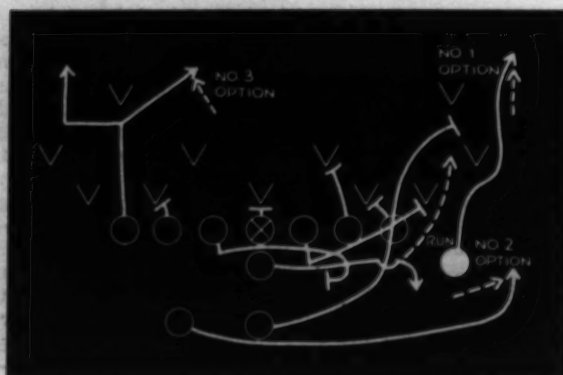
◀ ARMY OPTION RUN-PASS

At snap, LH runs laterally to right, FB blocks first man in, RH goes down and out, while ends go down and in. QB pitches to LH, who runs if corner isn't covered or passes to RH or RE, if either is open.



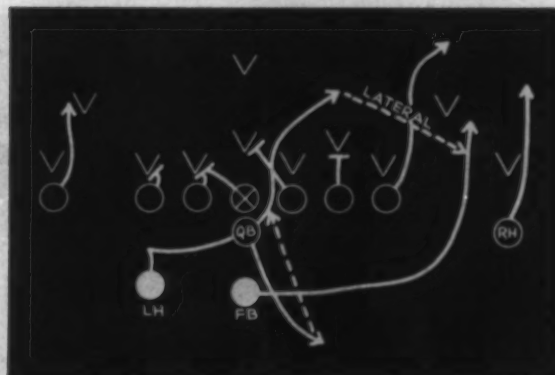
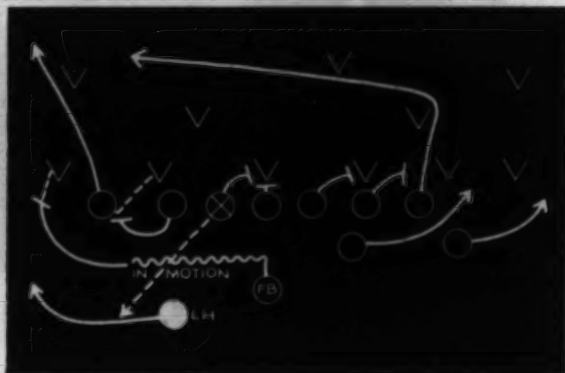
◀ NORTHWESTERN POWER SLANT

With line unbalanced to left, QB spins and makes simple hand-off to RH. RG pulls out to lead play off tackle, blocking right linebacker, while ball-carrier cuts between double-team blocks by left side of line.



NAVY SHOVEL PASS-LATERAL

QB retreats rapidly on slant to right, faking hand-off to FB, who flares wide. LG and C double-team DRG; RG and RT go through and seal off linebackers, and DLG is let through. LH steps to left, then heads for hole, where he's hit with pass. If unmolested, he keeps running. If met, he looks for lateral to FB.

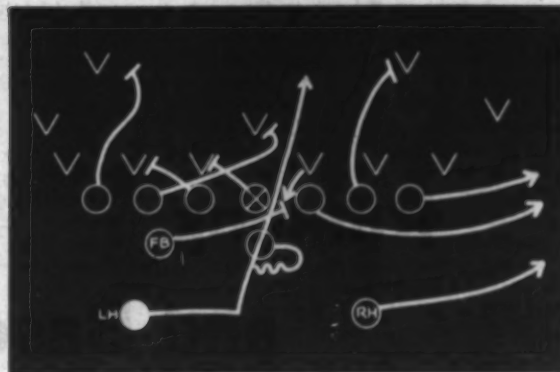
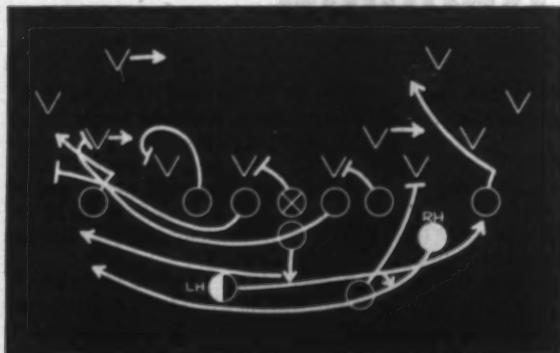


RUTGERS SHORT-SIDE OPTION

Classic example of isolating a defender and confronting him with a dilemma. FB goes in motion. As he clears, C snaps lead pass to LH, who sweeps to left behind FB and LG. Meanwhile, LE goes down and out and RE down and across. If DHB comes up to meet run, LH passes. If DHB retreats, LH runs with ball.

DARTMOUTH COLLEGE CUT-BACK

In this V formation, FB is key blocker—his trap-block on DLG opening hole for LH. Trap is baited with fake sweep to right—LH, RH, RE, and RG starting in that direction. On taking snap, QB spins to right, as though to flip to RH, then pivots 180° and hands off to LH, who cuts through hole over center.

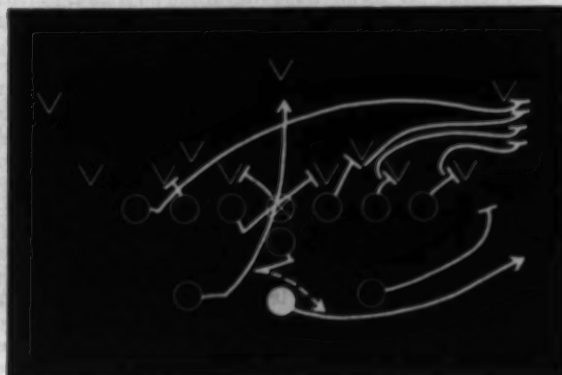


NEW YORK GIANTS REVERSE

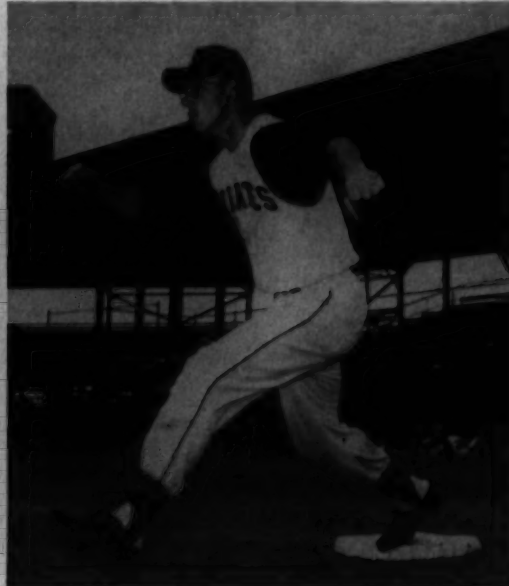
LH takes hand-off and begins sweep to right, as RH, in slot, heads back to left. LH hands off to RH, who sweeps to left behind interference of QB, the two guards, and LE.

OKLAHOMA UNIVERSITY PITCHOUT

A standard T play in about 1950, Oklahoma uncorked it against Pittsburgh in Orange Bowl and scored in two plays! "There's nothing original about it," Coach Wilkinson informs us. "QB makes poor fake toss to HB, makes good fake to opposite HB, then pitches wide to FB." Pittsburgh is still chasing him!



(Continued on page 64)



(Left) Bob Skinner showing how to run on a straight line right over bag; (center) Bill Virdon hitting first with right foot and pushing off hard at 45° angle to second; (right)

hitting first with left foot and crossing over with right at 45° angle—exhibiting excellent body lean in toward diamond. Note in each case how the toes point straight ahead.

By RAY WELSH

Scout-Conditioning Director, Pittsburgh Pirates

Running and Base-Running

EVERY successful baseball coach strives for a running ball club. Alert, timely base-running scores more runs and produces a psychological condition that tends to upset the opposition.

The Good Lord, our parents, and grandparents gave us what native speed we have. But most of us, due to some flaw in form, have never realized our real potential.

Anyone can be taught to run a little faster, if he has the desire. Certain basic principles of running, if adopted, will increase your speed and make you a faster and more efficient runner.

1. Relax. A baserunner can improve his speed by learning to relax.

2. Run well up on the balls of the feet. This gives you that bounce, spring, and balance to help propel your body forward. Your legs are the springs that propel you when running. You cannot run on your heels when going for a fly ball or it

will cause your head to bob and you'll see two balls and misjudge the fly.

3. Point the toes straight ahead. Why? Because in going from home to 1B, you can gain approximately 7½ inches. How? It takes from 15 to 18 steps to go from home to 1st. If you point your toes straight ahead, you'll gain at least ½ inch with each step. That comes to 7½ in. to 1st base.

4. Run in a straight line; it's the shortest distance between two points. Any deviation from this form results in a loss of time and energy. If you wish your boys to run in a straight line and have their toes pointing straight ahead, have them practice running straddling a line.

5. Lengthen your stride by finding and developing your proper stride. The average stride is the height of the body, and an over-strider is worse than an under-strider. The average length of a

rabbit is 10 in. and it leaps 3 ft. when running. Average kangaroo is 6 ft. and it leaps 30 ft. Johnny Woodruff, the University of Pittsburgh former Olympic champion, is 6 ft. 5 in. and his stride was 13 ft. You must find your stride with no strain.

It takes from 15 to 18 steps to go from home to 1B. If you add ½ in. to each stride, that will be 7½ in. at 1B. How often have you been thrown out by no more than 5 or 6 inches? At least 15 times. If you had been safe only 10 of those 15 times, it would have added 15 points to your batting average. The long striders on the Pittsburgh Club are the fastest runners.

Tension stems from many causes, and stretching muscles and tendons is a remedy for tension. The whole body must be supple if the athlete is to turn in his best performance and avoid injury.

The exercises that I use—jogging,

running, bending, stretching and arching—are planned with that in mind. These exercises relate to the fundamental skills and muscle movements an athlete makes while playing. This program will result in loose, warm, supple, muscles and tendons which will be able to stand the strain imposed on them in the game.

6. It's important in all running to have what is called a running angle—body leaning, head up, ankles, hips, shoulders, and head in a straight line. Don't run bent too far forward or too far backward. Assume the proper angle. This is nothing more than body balance, controlled by arm action.

7. Arm Action—opposite arm and leg movement. The arms are bent and pushed forward with a snap. In general, if the arms are relaxed the entire action will be relaxed and more efficient. Arm action can be taught by having the players walk swinging their arms, then jogging and then running.

Leads, breaks and short sprints are good developers. It has been proven that short sprints will increase the speed of some players by at least $\frac{1}{2}$ sec. for 50 yards.

There's no doubt about distance running increasing your endurance. Running in figure 8's and circles will strengthen your ankles, knees, hips, back, and the whole body will

develop coordination and fundamental body management.

Speed and sliding aren't all that go into heads-up baserunning, however. The ability to judge distance, to spot instantly if the fielder is in position to throw and the quality of his arm are factors that help determine how far a runner can go.

As repetitious as this may sound, it's a must for a would-be stealer to get a good jump on the pitcher. It's largely a matter of studying the pitchers' moves and personal mannerisms and breaking for the bag at the precise split-second you know he's going to the plate with the ball.

It's a combination of both speed and reflexes. The dangerous baserunner is the one who gets all the distance possible out of his hits and takes the fullest advantage of the errors of the opponents.

Max Carey, the greatest base stealer the Pirates ever had, who led the National League in 1922 with 51 steals, was unsuccessful only twice. He put it this way, "It isn't so much how fast you run as it is how fast you start running."

Carey had two secrets. When he was on first or second base, he could sneak off the bag an extra half-step and still get back in case of a pick-off. And, when he did break, he was at full speed on his second stride. "Watch the feet of the 1st baseman," Max would tip runners.

Jackie Robinson used to study the pitcher's feet, since the feet reveal where the pitcher will throw before any other part of the body.

Willie Mays says he watches a pitcher's head, while Richie Ashburn watches the pitcher as a whole, not any one part of him.

Bob Skinner's (Pittsburgh Pirates) secret lies in never giving away his intention to steal. He's smooth, all of a sudden he's moving—that's all. No warning. It's the timing. He studies a pitcher's moves as much as anybody. He gets a good jump on the pitcher, and he's in high gear before anyone realizes it.

If a pitcher knows that a runner in going to stay glued to the bag, he can concentrate on the batter. But if the runner makes several false starts, the pitcher has to divide his attention and cannot be nearly so effective as he would have been with a stationary baserunner.

Many times a runner at first can fake a dash to second. The opposing catcher may call for a pitch-out on first pitch. Maybe the runner had no intentions of going, but at least he helped his teammate put the pitcher in a hole right at the start.

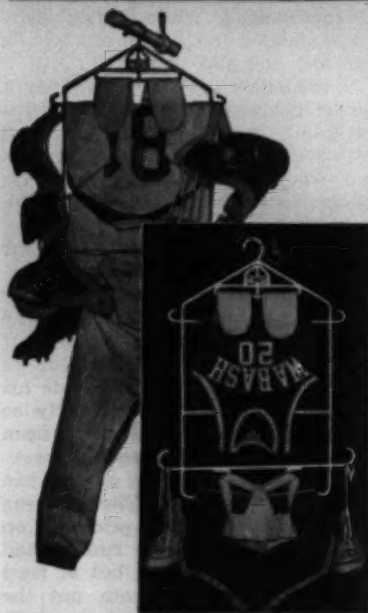
The most important pitch is the first one and when the count is 2 and 2. If you're known to have excellent speed in running the bases, the fielder must get rid of the ball faster than usual and many times



(Left) Proper stance and lead off first base, demonstrated by Bob Skinner and Dick Stuart; (right) cor-

rect break to second base, pivoting on the right foot and crossing over with the left foot.

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he'll boot the play in his anxiety to get the ball off to first in a hurry.

The official scorer has to take all the circumstances into consideration and 9 times out of 10 will give you a hit. Skinner, Virdon, Clemente, of the Pittsburgh Pirates—all have been beneficiaries of this situation. Yes! Get a reputation as a base runner—it helps the batter behind you.

Statistics have proven that your batting average is aided whenever you get ahead of the pitcher. Be adventuresome—take a lead. Draw the throw. Every time you draw a throw, you upset rhythm and increase the chances of an error by the opposition.

Show me the fellow who can't be caught off base, and I'll show you a timid soul who never strays more than three feet from the bag and who invites the double play. He plays it safe all his life and probably winds up wearing belt and suspenders.

The difference between a good baserunner and a poor one is just about the same as the difference between amnesia and magnesia.

Amnesia—don't know where you're going.

Magnesia—certainly knows when you're going.

Running speed is essential, but alertness, aggressiveness, adventurousness, and the desire to steal are more important to a good baserunner. You can't run bases as unplanned as a hiccup. It's your head—heart—legs. Think—desire—speed.

HOME TO 1B. The moment a batter hits a ball or receives a base on balls, he becomes a baserunner. The swing of a right-handed hitter carries him around and away from first base. He can best get his start by pushing off with his left foot and throwing his body in the direction of 1B. The left foot starts the drive, the first step comes with the right foot, and from there on it's a straight run down the base line.

A left-handed hitter swings around toward first base and his follow through sets his momentum in that direction. He can capitalize on that advantage by pushing off on the ball of his right foot, and leaning his body in the direction of his run. A left-handed hitter takes his first step with his left foot.

Half the players in major league baseball will run far out of the line in the last 30 feet before reaching first base in order to conform to some foolish fantastic idea that they can run 120 feet quicker than they can run 90 feet.

Don't watch the ball. Run hard. Run in a straight line. Don't leap

for the bag. Slide only to avoid the tag at 1B. Stay in the 45-foot line. Don't interfere with the ball, foul or fair.

As you approach 1B, you may see the possibility of advancing to second. Touch the bag and make your turn at 1B. Hit the inside corner with your instep with whichever foot is most convenient in your stride.

If you hit the bag with your left foot, cross over with your right foot and lean your body inside toward the pitcher's mound. If you hit the bag with your right foot, hit it with force and push off toward 2nd base.

ON FIRST BASE. A runner should take his lead when the pitcher starts to assume his pitching position. A gradual movement away from the bag is best—a gradual sideward movement with right foot and then left foot, keeping the weight balanced on both feet. Lead from the front corner of the bag in a straight line to 2nd base. The amount of lead varies with individuals and the pitchers.

BASE-STEALING DRILL

We use the following drill in developing base stealers: Squad of five men with the front man on the base line off first base and the other four in single column behind the front man. Five men are now one behind the other off first base. Include a pitcher, a catcher, and 1B to hold men on.

Take a lead and increase it 6 inches farther until you've reached maximum distance. The pitcher delivers to the plate, or chooses to throw to first base. The runners don't know where the pitch is going (and sometimes pitchers don't even know). If it goes to the plate, they all break for second. If it comes to first, they all return to the base line.

THE STANCE. In a crouched and comfortable position with legs comfortably spread and weight on balls of feet—shoulders, hands, and arms are always loose and relaxed, not tight and tense.

THE BREAK. The break is accomplished by a quick pivot on the right foot and a simultaneous crossover step with the left foot, turning the body in the direction of the run. The first step is a short one with the left foot, pushing off with the right foot.

The body remains low, particularly at the instant of the start, then gradually assumes the natural running position. The form is very similar to that of the sprinter in track. In returning to the base,

(Concluded on page 75)

OPEN LETTER TO COACHES

For several years we have been talking to you about the many advantages of Pennsylvania rubber-constructed basketballs . . . longer life, quality materials, truer bounce, better rebounds, economy and player acceptance. Recently some very interesting statistical data was developed, which, we know, will be of great interest to you in your constant effort to turn out winning teams. Over 92% of basketballs sold are rubber constructed . . . this indicates that almost without exception every young player learns with a rubber-constructed ball.



PENNILT

Now, consider the constantly rising game scores—how do you account for the increased skills which contribute to these higher scores? Granted, improved coaching technique certainly has been a very important factor, but here's something else to consider—the more basketball a boy plays, the greater his skill. And what has enabled youngsters to make "back-yard" basketball a year 'round sport? The advent of quality rubber-constructed basketballs like Pennsylvania.



Countless coaches have told us of their success in cashing in on the experience young players had with rubber-constructed basketballs. It just makes sense to keep them using the type of ball they learned with! Why change when a boy makes varsity? There are enough techniques a coach must develop in his players without worrying about player-acceptance of a new kind of ball.



Draw your own conclusion—shouldn't you order a supply of Pennsylvania basketballs for the coming season? Ask your Pennsylvania Dealer about the special Varsity Pack featuring Pennilt, your finest ball for game and practice.

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This stroke-volley is executed four or five feet in front of the service line. It's a below-waist shot handled more like a stroke than a volley. Head's backswing and follow-through are unusually big and while he gets tremendous depth and speed, he must make more errors—since he's almost driving a ball from below-net level and close to the barrier. It's amazing he makes so many winners as he does considering the fact he allows himself so little margin for error.



Defense Against Power Tennis

TO COACHES who've followed the pattern of tactics and strategy in net play since its nativity, the present swing to power tennis is significant.

With each system, each trend and step of progress, the sport has moved naturally up a level. Today, the big game occupies the driver's seat. And the long spiral bringing power tennis into prominence may continue until an effective defense dethrones the king from his regal throne.

As a coach and instructor, you

must realize that every member of your team isn't physically equipped to master the big game. Instead of grooming these youngsters along a path they cannot be expected to travel successfully, I've found it profitable to teach them a number of methods to undermine and destroy the effectiveness of the power game.

In explaining these strokes and tactics, I'd like to point out that there's no accepted system for harnessing the big game. But it has been

possible, through discreet employment of strategy, to reduce the effectiveness and bring defeat to the power player.

TYPE ONE

The success of the first method is based on a major and minor premise. The most advantageous area of the court to compete with proponents of power tennis is at or near the service line.

After your adversary serves, he moves into a position a few feet from his own service line. Here, and here only, can we set up a cross-fire that may disturb him.

Under the premise that he'll arrive at this area by the time a return reaches him, we attempt the following: *Heavily topped forehand and/or backhand directly toward him with the intention of having it drop rapidly toward his feet.*

How is this drive hit and what will be the effect of its delivery on your opponent?

By **JOHN L. KRAFT, JR.**, *Tennis Pro, Memphis Country Club*

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Using the regular or orthodox backswing, you should teach the pupil to drop the head of his racket decisively as it begins the forward motion. Descending below the height which the ball will be struck, the racket rises swiftly to the hitting plane and makes contact almost beneath the oval.

From this position, the arm lifts rapidly bringing the frame up and over the ball in an elongated follow-through.

The racket makes contact slightly ahead of the left foot (for forehands) and rises in a high loop as the stroke is completed.

This movement imparts maximum top-spin on the ball, making it streak across the net and drop decisively at the adversary's feet.

Its effects on the power player are two-fold. First, it causes him to hit up on the ball, robbing him of an aggressive return. Secondly, it makes him play the volley safer, since the angle potential from this area is greatly curtailed.

Only the finest volleyer can play a return effectively from this section of the court, when it's hit in the manner described. Certainly, few young high school and college players will be able to place the ball aggressively.

The obvious alternative then is to volley deep with a margin of safety and wait for a later and higher drive to attack successfully.

It's no simple task to teach a pupil to hit and control the heavily topped, spin drive. He should be schooled primarily in returns from a hard serve as it's the kind of offense expected from the power system.

I've found it wise to alternate the type of serve—flat, twist, and slice. This gives him practice against all opposition and closely simulates game conditions.

Be sure to let him work in the backhand and forehand courts. There's more difference than is first apparent in handling returns in the left and right courts.

Essentially, the angle he faces makes his job different—and while balls are still served down the center for effect, the big guns ordinarily select the outside area in the service court.

This is done in order to force an opponent to move wide and thus open a greater part of the court for attack purposes.

TYPE TWO

The second defense is a limited method that's successful against shorter opponents. Like type one, it takes advantage of the basic court position weakness in power tennis.

The boy is taught to utilize his regular arc to alter the speed of the stroke in time to lob the ball toward his adversary.

Two types of lobs are employed in this attempt to drive a wedge in the big game. The first is a defensive lob which is hit exceedingly high and best directed toward the backhand side.

The power player must make his overhead smash from an unbalanced position, and the timing of a high lob adds to his difficulties. We use this to vary our defense and sometimes are able to force an error.

In all instances, the high lob permits your student to return to the center of the court where he enjoys a distinct defensive advantage.

The low or offensive type lob is utilized against a player of small stature to win the point outright. With sufficient practice, it can be controlled at a height just above his reach. Because it's low, it has a faster travel speed and in many cases an opponent is unable to outrun the ball in order to make his return.

How is the low lob hit?

Using the orthodox backswing, the head of the racket rises only slightly in contact and follow-through. By advancing the top level of the racket frame, enough spin and control are imparted to guide the lob swiftly above the opponent's reach and onto the playing surface.

I've found that a two-man system is very helpful in developing your pupil's offensive lob. Place a member of the team on the service line and use another to do the serving. This gives the student a fixed target in almost the exact spot to which a power player advances after his serve.

TYPE THREE

Method No. 3 utilizes down-the-line drives to harass the big game. Perhaps the most difficult of the defenses, it exploits the open areas along the alleys to shoot for placements.

Be certain in teaching this method to point out that down-the-line returns are hit later, actually further back than cross-courts and more control is required to execute them.

A long follow-through is helpful here and additional hours should be spent if this type drive is to be perfected.

You'll find it effective to mark sections in the back area of the court to which the player should direct returns. Once he's able to control drives in a moderate sector of the

(Concluded on page 78)

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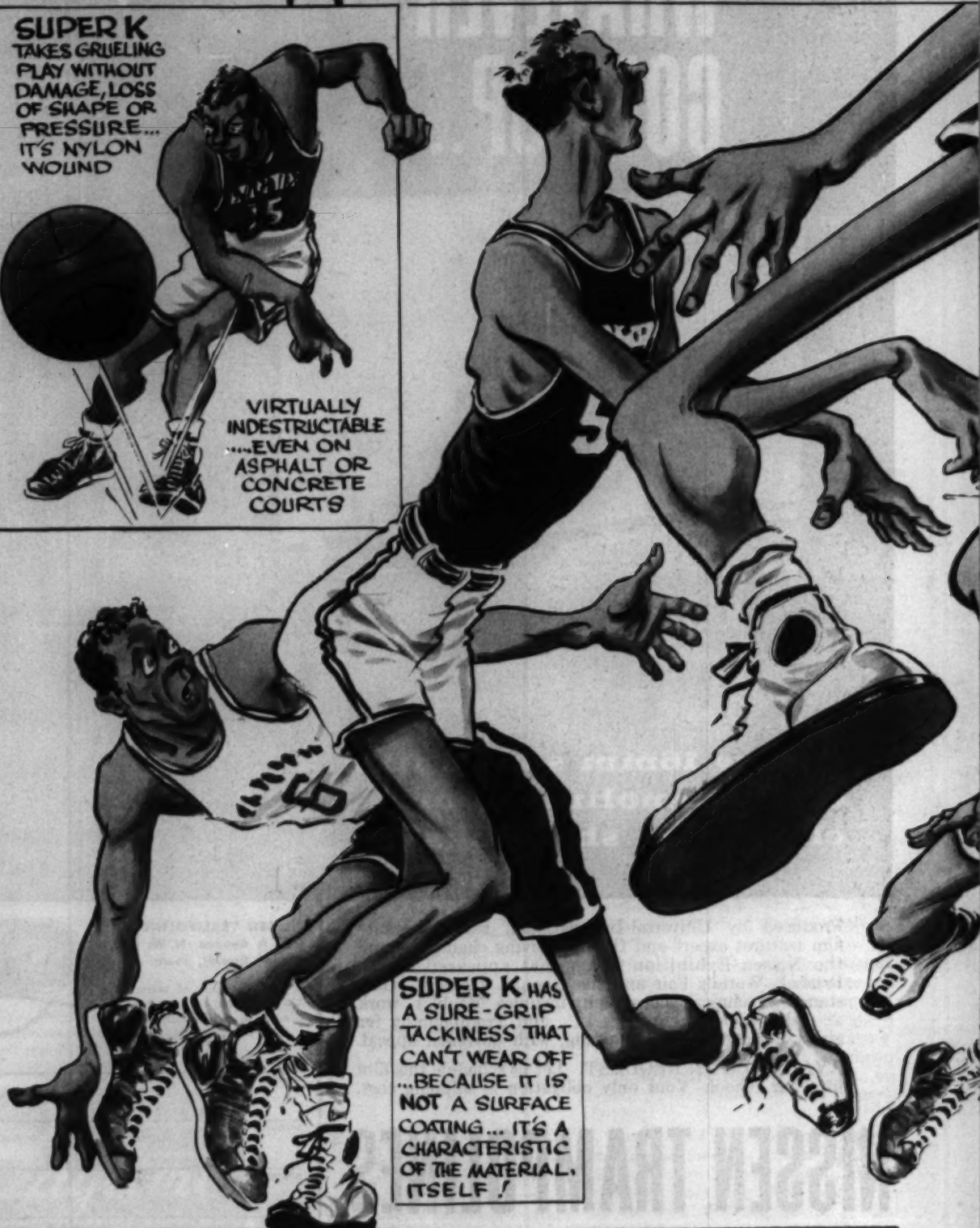
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by William Mullin



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Experimental Research in Swimming

By DONALD B. SWEGAN and HUGH L. THOMPSON

College of Physical Education, Penn State University

FREQUENTLY, the coach in any sport has difficulty keeping abreast of the latest developments in his field. Often research studies have been conducted which might change significantly certain coaching methods if they were made known in professional journals such as *Scholastic Coach*.

It's the purpose of this article to summarize the more important research studies which might be of interest to the swimming coach. Only those studies which were conducted under experimental conditions will be considered here.

STUDIES DEALING WITH PHYSIOLOGICAL FACTORS

1. Effect of Drugs on Swimming Performance. Haldi and Wynn¹⁰ found that ingestion of 100 milligrams of metrazol, 5 milligrams of benzedrine sulfate, 250 milligrams of caffeine alkaloid or 200 milligrams of sucrose approximately an hour and a half before swimming had little or no effect on sprint swims of 100 yards.

Blood sugar levels after swimming didn't differ appreciably, regardless of the material ingested. Subjects didn't know what material was being ingested prior to performance.

2. Diet and Swimming Performance.

Haldi and Wynn,¹¹ in experiments on 12 swimmers, found that the time required to swim each of three laps in a 100-yard sprint was the same after a heavy meal as after a light meal eaten 2½ to 3 hours before swimming. Supplementation of the light meal by the ingestion of 50 or 100 grams of sucrose one hour before swimming had no effect on swimming time.

The drop-off in the second and third laps, which is taken as an index of fatigue, was the same regardless of the amount of food intake before the swimming. The blood sugar concentration immediately after swimming was approximately the same in all the experiments regardless of the food intake.

3. Oxygen Consumption and Swimming Performance. Karpovich¹⁴ reported, in experiments on varsity swimmers at Springfield College, that oxygen inhalation immediately followed by swimming increased speed in the 100-yard sprint. However, inhalations four to five minutes before performance didn't improve speed.

Inhalation of oxygen for five minutes after a 100-yard swim had little effect upon recovery, as judged by a second 100-yard swim 20 minutes later. Oxygen breathing immediately after severe exercise did give quicker relief from respiratory and circulatory embarrassment.

4. Cramps and Swimming. Over

1400 students enrolled in required swimming classes at Georgia Tech were taught preventive and corrective procedures in handling cramps resulting from arduous swimming tests.¹⁶ Results indicated that cramps aren't likely to occur under usual bathing conditions. Anticipating a cramp and stretching the threatened muscle before it has time to shorten will make the swimmer much more comfortable in the water.

In questioning over 10,000 boys, not one person was encountered who had seen or had a stomach cramp. Minor variations in water temperature apparently have no effect on cramps.

5. Swimming and Disease. 194 male college students, randomly selected, were divided into group I of 109 and group II of 85, respectively.¹⁹ Group I participated in twice-weekly swimming classes for two months, while group II did no swimming during this period. Subjects were instructed to report to the infirmary immediately if they experienced signs of ear infection.

The findings indicated that participation in swimming didn't result in a significantly increased incidence of otorhinologic infection. Resistance to ear, nose, throat, or sinus infection isn't markedly altered by engaging in aquatic activity.

6. Warm-up Studies. Two groups of subjects were tested by Thompson²⁰ to determine if warm-up affected performance in speed and endurance in swimming. No evidence was found of improvement from informal warm-up immediately preceding testing in swimming.

Formal warm-up did improve group performances in speed and endurance in swimming. Formal warm-up was

Even when a player makes a fast jump pivot, Seal-O-San finished gym floors help him hold his footing. Notice the position of feet and legs in this high-speed photograph . . . see how Seal-O-San provides a non-slippery surface.

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the exercises which imitate the activity for which the performer is getting ready, and informal warm-up was the exercises of general, free movements.

Lueft¹⁷ did a study with 49 subjects on the effects of warming-up on swimming speed. The warm-up consisted of formal type exercises on land as well as executing a crawl stroke in the water for 50 yards.

He reported that the mean times for the warm-up trials were slightly faster than the mean times for the non-warm-up trials. However, the difference in the mean times wasn't significant at the 5% level of confidence.

Leonid Muido¹⁸ conducted an experiment which pertained to the influence of preliminary exercise and body temperature rise upon performance. He exposed his subjects to preliminary "jogging" for 10 minutes, heavy preliminary work on the bicycle ergometer for a 10 minute period, hot showers, turkish baths, radio diathermy, and cold baths at different intervals of time. He concluded:

(A) A given distance could be swum in a shorter time when the organism was warmed previously.

(B) Both—active warming by preliminary work and passive warming by hot baths, radio diathermy and turkish baths—had the same beneficial effect.

(C) The increased rectal, i.e., blood temperature, before swimming seemed to be more essential for improved results than the increased muscle temperature.

(D) The deviation of the influence of warming was at least 60-80 minutes.

(E) It's quite probable that the beneficial effect of higher body temperature is due to the increase in the velocity of reactions.

In 1951, Fillipponi¹⁹ conducted an experiment to determine the effect of warming-up upon speed in swimming 100 yards. The 12 subjects, members of the Springfield College varsity swimming team, were directed to swim a distance of 100 yards, five times with a formal type warming-up and five times without warming-up. No statistically significant difference was found between these times.

Schmid, as reported by Karpovich and Hale,¹³ stated that not only setting up exercises, hot bath, diathermy, and shower with alternating hot and cold water, but also massage improved performance of both men and women in swimming 50 meters, running 100 meters, and riding the bicycle ergometer.

Carlile³ conducted an experiment in swimming in which he used hot showers as a passive type warm-up for his subjects. He stated:

(A) A subject showed an improvement in swimming performance in 220-yard swims of 14% following 8-minute hot showers. The difference in swimming speed was statistically significant.

(B) Ten swimmers in 230 trials with various strokes showed an improvement of 1% for 40-yard time

trials when the swims were preceded by 8-minute hot showers. A statistical consideration of the group data showed the difference in swimming speed between control and pre-heated swims to be highly significant.

It's suggested that at least in temperate climates, some passive pre-race heating of the body, in addition to some active work, constitutes a valuable adjunct to the warming-up procedure.

STUDIES ON SWIMMING STARTS

Tuttle, Morehouse, and Armbruster²¹ studied the effect of starting blocks in swimming sprints. Starting time in this study was defined as time lapse between the pistol shot and the swimmer's departure from the mark. Eighteen trained swimmers were tested under normal conditions without starting blocks and then with the blocks.

The results indicated that the starting blocks were an advantage to only one of the swimmers. Almost all the swimmers recorded faster times without the use of starting blocks.

The same authors also studied the optimum time for holding swimmers on their marks.²¹ Ten top swimmers were timed with various holding times to determine which correlated best with the starting times. It was reported that the fastest starting times were recorded when the swimmers were held on the marks between 1.6 and 2.2 seconds.

RELATIONSHIP OF CERTAIN TESTS AND SWIMMING ABILITY

1. Gross and Thompson⁹ conducted tests on 78 male college students to determine the relationship of swimming ability and dynamic balance. The subjects were rated on ability to do the American Crawl stroke and were then given the Bass Test for Dynamic Balance. They were also timed on a 30-yard sprint.

It was found that the students with good dynamic balance were among the group with the higher scores in swimming form and speed, and vice versa. Balance was concluded to be an important factor in swimming.

2. Wilson²³ gave a series of tests which supposedly measured aspects of coordination to 60 subjects at Springfield College. Some of the subjects were varsity performers, some average, and some poor swimmers. Tests included the land drill test, Olson's Midget bath, Suspension tests, and velocity tests timing the swimmer in one length of the pool.

Only the last tests gave high correlations with swimming performance. The velocity tests included one lap with arms alone, one with legs alone, and one using the whole stroke.

ANALYSIS OF STROKES

Cureton⁶ found definite evidence that the swimmers with the best flut-

ter kicks derived a much greater percentage of this power from the hips. He stated that approximately 50% of the power of the leg kick comes from the hip.

This pointed to the fact that for efficient propulsion a great deal of the control should come from the abdominal and particularly the lower back regions of the body. When buttocks ride high or even above the surface of the water, it designates that the kick is fairly powerful because it's a sign the kick is coming from the abdominal region.

He concluded that 48.4% of the total work done in the flutter kick is useless for propulsion, with the exception that it helps keep the legs horizontal to the surface. His experiment showed that the best performance occurred for the majority of the subjects when there was a bend of approximately 15 degrees allowed in the knee joint.

He found that the upkick may be stronger, as the angle of the foot is more nearly at right angles with the direction of motion. Ankle flexibility corresponded to a greater speed advantage. He asserted that the exercises which stretch the ankles are beneficial, whereas the kind of exercises which harden the lower leg muscles should be avoided.

He concluded that for best speed a person should use as wide a kick as his physique will stand, up to a maximum width set by the limitations of resistance (approximately 24 inches). He maintained that rate and width are intimately related, i.e., a wide kick usually calling for a slower rate, and vice versa.

Later, a study conducted by Cureton⁶ revealed that overall suppleness or flexibility was a great asset to swimmers in their swimming ability. He maintained that the movements are easier; therefore, not disturbing body balance and, also, decreasing resistance.

An experiment by Wilson²³ revealed that loss in efficiency which results when the separate movements (arms, legs) of the crawl stroke are combined into the composite stroke was due to three factors:

(A) Resistance Loss—the resistance to a body moving through the water increases at faster speeds.

(B) Pure Coordination Loss—pure coordination loss is a neurological loss.

(C) Loss due to Slip—a swimmer moving at faster speed increases the flow of water under his body, and this has the effect of increasing the slip, which results in a loss in efficiency.

Karpovich¹² wrote that in swimming with a uniform speed, the propelling force is equal to water resistance. He also found that good crawl swimmers derive about 70% of their propelling force from their arms and 30% from the legs. Poor crawl swimmers derive 77% of the propelling force from the arms and 23% from the legs.

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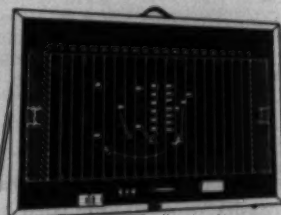
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vich¹⁵ to be the most important resistance factor. He found that the type of bathing suit is more important than the quality of the suit; e.g., there was an increase in resistance when a swimmer used a woolen suit, and no difference in resistance when a swimmer swam in a silk suit or in the nude. A suit which is loose about the back and tight about the legs may considerably increase the resistance.

A swimmer who merely lifts the head so that the eyes are just above the water level doesn't cause a great change in the water resistance. However, an exaggerated lifting of the head and body does create increased resistance, and turning the head for breathing increases resistance slightly.

Alley¹ conducted a study on an analysis of water resistance and propulsion in swimming the crawl stroke and found that:

(A) A bow wave of comparatively small magnitude was observed at the 5 feet-per-second velocity during the drag measurements. At the 6.4 feet-per-second velocity, the wave had increased to the extent that it very materially increased the drag. This bow wave is probably an important factor in limiting the speed of swimming.

(B) At each velocity for which surplus-propulsive force was measured, the mean for the whole stroke using the normal-arm stroke and the normal kick was greater than the means for the other types of strokes.

(C) At each velocity for which the surplus-propulsive force was measured, the mean for the normal-arm stroke was greater than the mean for the bent-arm stroke.

(D) As the velocity becomes greater than zero, there's a decrease in the surplus-propulsive force of the whole strokes and arm strokes alone, which is greater than can be attributed to drag.

When Counsilman⁴ experimented with forces in swimming two types of crawl stroke, he found that the continuous stroke created more effective-propulsive force than did the glide stroke for the same tempo and velocity. The glide stroke created more fluctuation in force than did the continuous stroke at the same velocity and stroke tempo. However, the continuous stroke was the fastest stroke.

He concluded that when swimming the continuous stroke, a swimmer should breathe on the side opposite his stronger arm and that when swimming the glide stroke, a swimmer should breathe on the side of the stronger arm.

Cureton⁷ found that the most effective part of the arm pull was the middle third and that the greatest force was developed during the pull when the elbow was flexed at 120 degrees.

Wetmore²² cited a study by Allen and Counsilman. Counsilman found that the whip action of the leg in the breast stroke created the greatest backward force, and that the swirls derived from the wedge action were upward, downward, and sideward.

Allen revealed that as the legs are drawn out of body alignment, the increase in resistance was proportionately greater.

He concluded that most of the leg resistance comes from between the hip and the knee.

Cake,² who tested subjects on two types of frog kick used in the breast stroke, found that the "semicircular arc whipping action" kick was superior to the "wedge action" kick because the whipping action has more speed, force, and economy of movement and wasn't any more difficult to learn.

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A Year 'Round Informal Track Program

By BERT NELSON, Los Altos, Calif.

WHEN a high school coach of my acquaintance heard that a winter track meet had produced three two-mile timings from one school under 9:50, he looked a little doubtful. When he learned, a little later, that two of these boys had run a winter mile in 4:22.4 and another school had produced a 4:23.7 runner, he shook his head. "There's something strange about all that," he ventured.

And to that charge I, and the other track buffs of the San Francisco Peninsula, will have to plead guilty. There's something strange about the entire track and field program which centers around the city of Palo Alto and neighboring Stanford University (both lying some 35 miles below San Francisco). But the strangeness doesn't lie in the stop watches (which are accurate), in the tracks (which are the correct length), or in overage athletes (one 4:22.4 miler was only 15). The unusual thing is the program itself.

Actually, there's no well-organized, pre-planned program. But inasmuch as there's a continuing interest in track, and sometimes in the field events, there is a program. And a most interesting—and productive—one it is, too. For my once doubtful friend, and for others who may aspire to a fuller program, here's what it's all about.

Once upon a time, track in the Northern California area was a flower that bloomed grandly in the early spring, blossomed vigorously in the middle spring, and then, before summer ever appeared, withered and died completely. Incredible as it may seem, a track-conscious area blessed by a rainless, not-too-hot summer, had no track activity in the summer. Schoolboys, many of them too young to work regularly, failed to take advantage of the golden opportunity to train.

The fall was just as bad. California's best track weather usually is in the first months of the fall school semester. There's hardly any rain before December 1 and the weather is warm through October and warm enough in Novem-

ber. Moreover, the boys are back in school, with someone to lead the way. But in time past there was practically no fall track practice, certainly no fall competition on the track, and very little cross-country running.

Then, about a half dozen years ago, the picture began to change. Forrest Jamieson, the Palo Alto High School coach, took things into his own hands. He began to build a distance running dynasty at his school and he encouraged others to compete with him. By producing winning teams, he set ever higher standards.

By sponsoring, organizing, and running meets, by endlessly sounding the virtues of fall training and cross-country, by bringing into the open his consuming love for the sport, Jamieson soon made the populous metropolitan San Francisco area cross-country conscious.

CENTER CROSS-COUNTRY MEETS

One of his innovations has become a mainstay of the local "program." That is the "center" cross-country meet. In each of four different parts of the seven county Bay Area, there's a center of cross-country activity. There, for four or five weeks each fall, any and all schools from the area can find cross-country competition.

The local center, for instance, will feature five to seven races each week, with up to 300 boys competing. Schools are matched by the meet director to provide the strongest races and there's competition for junior varsity, soph and fresh runners.

The overall result was that a lot more boys ran cross-country in the fall. And in the spring the quality rose proportionately. The once rare sub 4:30 mile was no longer big news. Palo Alto High, for a leading example, turned out eight boys in five years who bettered 4:29. And Paly won most of the cross-country meets, leading Jamieson and others to wonder if there were better teams in the U.S.

One way to find out was by a national postal competition for the preps.

So Track & Field News, which has its headquarters in Los Altos, a next-door neighbor to Palo Alto and Stanford, put one on. Each entering high school would run its cross-country team two miles on the track, and the cumulative time of the five best men would be entered against similar times turned in by the other schools. In 1957 Palo Alto failed to win the national meet by a single place, and in finishing second attracted much local attention.

Last fall, when Paly went at it again, there was company. On one October Saturday morning in the 90,000 seat Stanford football stadium, exactly 112 high schoolers from 21 schools ran two miles. Fifty-two of them broke 11 minutes in the six separate races. And if this isn't a record entry in a high school, or any other, two-mile race I'd like to know about it.

Before the fall was over, Palo Alto had turned in a team time of 50:17.7. That's a 10:03.5 average for each of five runners all from the same high school. George Lin, just barely 17, ran 9:33.0. Mike Chilton, not yet 16, ran 9:49.7; and Mike Lehner, just 16, ran 9:50.0. Several other runners dipped under 10 minutes, the best of the lot being Bill Yaley from Serra High of San Mateo, with a rousing 9:40.5.

But more important than these fine times was the interest. Think back to that entry list of 112 runners. That, to me, represents real hope for the future of distance running in the U.S. When one small area can interest as many boys in going that far, and when as many run so well, then none can doubt that we have the potential to run even with any country over the longer distances.

But the interest must be maintained, and so the "program" grew again. The boys wanted to keep on running. They were learning to love the very real challenge involved in all-out conditioning. And they knew, better than most of their collegiate contemporaries, that year-round training not only produced the best results, but actually is easier in the long run.

So those of us who were interested set up a few informal competitions to be held right after the close of cross-country season. "We'll hold a couple of meets and then when the interest drops we'll call it quits for the winter," we said. But we were wrong. The boys wouldn't let us call it quits and competition went on right through the winter.

Every Saturday afternoon, without fail from the end of November to the first of March, there was a track meet on the practice track at Stanford. These were the meets that produced the winter-time 4:22.4 miles by Linn



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and Chilton, and a 4:23.7 effort by Yaley.

And the meets weren't confined to the preps. Some of the collegians came around and so did the club runners. One of the latter, Wil King of the Santa Clara Valley Youth Village, had never broken 9:20 for the two-mile. But in two successive winter meets he ran 9:18.6 and then 9:02.3, the fourth fastest by an American in 1958. Keith Wallace, Stanford sophomore, toured the two-miles in 9:11.9, the fastest ever by an American junior (under 19 years). Don Bowdon tuned-up for his Australian trip with December runs of 4:06.3 and 1:51.1.

Nor were these very informal winter meets confined to regulation events. We mixed in 330s, 660s and 1320s, held a 5000-meter race, and put on one of the rare steeplechase runs outside of a national meet. In this affair, on a wet January afternoon, Stanford's Doug Martin tried his hand for the first time and turned in a creditable 9:31.4, less than three seconds slower than the sixth placer in the 1958 AAU.

Then there were such events as the Runner's Septathlon, where each runner did the 100, 220, 440, 880, mile, two-mile and 5000 meters over a period of four meets. They were scored on the IAAF Scoring tables and each had a chance to test his range of speed and stamina.

Another rugged test was the two-man, 10 mile relay. Here each runner covers 20 laps of a quarter-mile each, running one at a time, then passing the baton to his partner. It's a tough interval workout, doing 20 quarters in around 70 seconds with an interval of about 70 seconds. Many a collegian is aghast at the thought. But four schoolboy teams, and two others, tore into it with amazing results. Winning were Yaley and Lehner with a time of 45:10.8, or an average of less than 68 seconds per lap. And this from preps.

INFORMAL MEETS

The meets were informal. Chances are that if you showed up to watch the meet you found yourself with a stopwatch in hand timing eighth place in the two-mile. Every entrant was timed and placed. And everybody got a chance to run his favorite event. After the scheduled races were held, there would be races at any distance if as many as two boys wanted to run.

It was a dry winter, but there was some rain and the track did get muddy. Still the meets went on, the scene of the races shifted a few feet to the gravel-covered practice path which Stanford has just inside the regular clay track. Here the boys could run in any kind of weather, and as a result we didn't miss a day.

Another informal part of an informal program was the "poop sheet." This is a two-page mimeographed affair which gives the results, schedules, comments, statistics and such of the meets. It appears irregularly, is

passed out free of charge to any who want it, and is mailed to all who provide stamped, self-addressed envelopes. Given a different name each issue, the poop sheet soon became popular with athletes and coaches alike. It had its uses, too, encouraging, needling or educating as the need arose.

Stencils and paper for the poop sheet, and a box of shells for the starter's pistol were the only expendable and costly items in the entire winter program. And they were donated. Which brings up a very interesting point. No part of the program that has been discussed to date needs money. It gets by on a minimum of volunteer help, and that's it.

The winter program proved so popular that it probably will be a regular feature. Certainly it must be the first regular series of outdoor winter all-comers track meets held in the U.S., if not in the world.

SUMMER TRACK

Summer track hasn't been neglected in the meantime. Two summers ago we got an all-comers program started, and now the regular Saturday meets are established fixtures during July and August. They, too, are informal and mix regular track events with such specialties as a 1½ mile run (where Alex Henderson ran the second fastest time ever), a decathlon (where Dixon Farmer of Miramonte scored the third best ever by a prep), and the two-man, 10 mile relay.

Henderson, the Australian whiz schooling at Arizona State (Tempe), is another contributor to the program. Hearing that Alex wanted to escape the heat of Arizona's summer, we found him a good job, boarded him with the family of a prep runner, and sat back to see what influence he would have.

We saw plenty. A no-nonsense runner of the Percy Cerutti school (which has produced world record holders Herb Elliott, John Landy, and two others), Alex made a vast and lasting impression on the young runners he worked with. To this day the results are apparent, not only with the athletes he actually knew, but with a spreading circle of others to whom the word has been passed. The "word," as Alex taught it, boiled down to intelligent work applied the year around. Immediate results prove Henderson right.

This summer (1959) we hope to enlarge our visitors program and offer opportunities for several runners to spend the vacation months with us. It's a grand opportunity for them, and a great thing for the locals. The young 'uns will learn and be inspired, and the older ones will have all the competition they can handle. We tried, moreover, to have a winter visitor over the Christmas vacation, and next year we probably will.

Another factor in this "program" has been the Northern California Track & Field Association. It's a long

name, and sounds pretty big. But what it boils down to is a small group of track nuts giving of their time to promote track in whatever way comes to mind. We haven't always been well-organized and we never have had enough workers or money. But we do what we can. And somehow or other we seem to be getting more done this year than we did last year.

The Association officially sponsors some of the events, such as the summer all-comers meets. Other times it provides the personnel. It puts on one of the few big time summer track meets in the U.S., the Redwood City Track Carnival. And it has interest building meetings every now and then, with speakers, movies and plans for the future.

Most any area could do as well as we are, and many can do better. We really haven't spent much money, nor put in much time. But a little scratching around has stirred up quite a bit of interest. And we've been surprised to find that oft-maligned American boy is more ready to get up and go than he may be given credit for.

Areas with a red-hot organizer can make our amateurish attempts look puny indeed. And we hope they do, for this type of "program" could, if it spread over the entire country, completely alter the concept of track in the U.S.

True, we do have certain advantages which are lacking most everywhere else. And these advantages just might make the San Francisco Peninsula one of the world's hot spots of track and field.

STANFORD FACILITIES

One of the major advantages is Stanford University. Three different facilities have been used in the program described above—the big stadium track, the fine practice track (Angell Field), and a beautiful cross-country course over the golf links. Backing the entire program, and lending a helpful hand frequently, are Coach Payton Jordan and Jim Terrill, his talented young assistant.

Aside from their part in promoting track as a whole, the Stanford people are making a bigger and better thing of track all the while. Meet promotion always has been a Jordan speciality and through it track fans are showing up in increasing numbers. With improving teams and more interesting schedules, including a good chance for the 1960 Olympic trials at home, Stanford can be said to be building track in the area.

Then there's Palo Alto High School, just across the highway from Stanford. Here Forrest Jamieson continues to build what is probably the finest distance running tradition among U.S. high schools. No one likes to lose, even to the champ, and so the other schools in the area watch and learn and build, and they, too, are becoming pretty darn good.

Just 15 miles down the road is the
(Concluded on page 76)

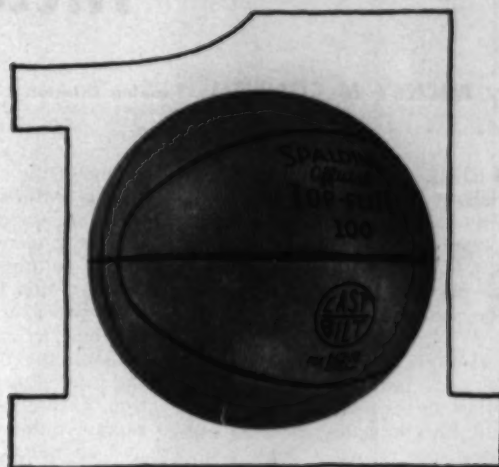
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Helping the Hitters

By **MICKY McCONNELL**, Training Director, Little League Baseball

THERE can be little debate about the importance of batting in high school baseball. The team that hits wins in most cases.

Can players be taught to hit or are they born? Experts have various opinions, but there's little doubt that a large majority of boys can improve as batters with good instruction and constructive drills.

John Piurek established an outstanding record as a high school coach at West Haven, Conn., by concentrating on batting. For several years his assistant coach was a talented semi-pro pitcher who had played college baseball. This fellow had good control and a variety of pitches, and his duty was to pitch batting practice every day.

He would learn the weaknesses of the hitters and then pitch to those weaknesses. A boy was advised that he would see nothing but curve balls outside until he learned to hit them, if that happened to be his weakness. Players with normal aptitude will learn to hit most pitches if they see enough of them.

Of course, a player could concentrate so much on one pitch that, while he'd learn to hit it, he might forget to hit others that he could hit before.

This happened to Gil Hodges when he came up with the Dodgers. He saw nothing but curve balls in batting practice, and by the time he learned to hit the curve the opposing pitchers were getting him out on the fast ball. Then he had to learn to be ready for the fast ball, but still wait for the curve.

Getting back to the batting practice pitcher, most schools aren't as fortunate as West Haven, but an enterprising coach often can find an experienced pitcher in the community who might volunteer to do some pitching after work in the late afternoon or on a Saturday to help the high school hitters—particularly if he's a graduate of the school.

One of the most common mistakes young batters make is taking their eyes off the ball too soon. While there's a common belief that good hitters follow the pitch till it meets the bat, this isn't possible.

However, the eyes should follow the ball as far as they can, with eyes on the ball from the moment the pitcher begins his pitching motion. Like a golfer, the head should remain quiet throughout the swing and should be aimed in the same direction at the finish as at the start.

When Al Mamaux was having unusual success in developing hitters at Seton Hall College, he used a very effective drill. During the first week of practice, he required his batters to hit to the opposite field.

Any time a batter pulled the ball, he had to lay down his bat and chase the ball, losing his turn at bat. It was amazing how quickly this arrangement helped the hitters



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learn to hit to the opposite field.

This drill was very helpful in getting the batters to follow the ball. It's generally the boy who's trying to pull the pitch into the next county who also pulls his head around and loses sight of the ball when he swings.

Under normal conditions, there are two types of batting practice. First, is the one in which it's desirable to have a pitcher with good control try to throw the ball at about 75 to 80% of his top speed while concentrating on getting the ball into the strike zone.

This kind of pitching gives a batter a chance to "warm up" and get his timing under control. However, this kind of pitching alone will never develop a hitter.

As Branch Rickey has said several thousand times, a player likes to practice what he can do well. That is why a Tommy Brown could win the home run championship during batting practice when the pitcher grooved fast balls where Tom liked to hit them.

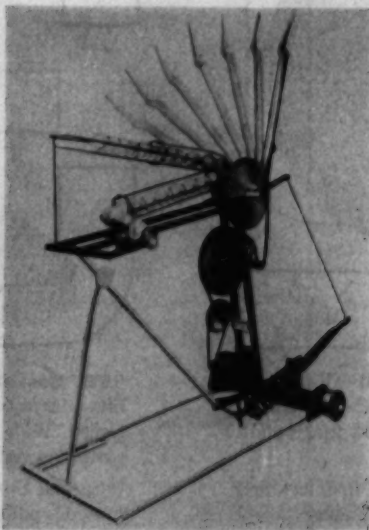
But he didn't get that kind of pitching once the game got under way. His time would have been much better spent working on his weaknesses at the plate.

Since players seldom will work on their weaknesses of their own volition, the coach must set up drills to help them. These drills should include "game condition" pitching, with the catcher giving signals and the pitcher trying to keep the batter from hitting the ball.

How you set up your batting practice depends on the available time.

The standard pre-game pattern is a good one. I recommend that each batter bunt twice before hitting away, and then limit his "hitting" to three swings. This should be a warm-up round.

The second round, when time is



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available, could be a "game condition" round with the batter limited to three strikes—with the batting practice catcher calling the strikes.

Whenever possible, work your batting-practice pitchers under simulated game conditions, too. Have one pitcher throw 15 pitches and then alternate with a second pitcher.

The two pitchers can rotate, throwing 15 pitches at a time and then feeding balls to the other pitcher when not pitching. This keeps the pitchers from tiring and gives them about an inning of action at a time.

Every squad should have access to a batting tee. It can be used in many ways. With the use of pressed wool plastic balls, players can practice hitting against the side of a gymnasium.

If such balls aren't available, baseballs can be hit into a net. Players can thus spend their spare time swinging a bat with some purpose during the winter months.

Ted Williams discovered the value of the tee when Bert Dunne was popularizing it in youth programs on the Pacific Coast. I brought it to the attention of Branch Rickey, who introduced the tee to the major leagues at the Vero Beach training base of the Dodgers, and it has become a standard training aid in most spring camps and professional parks.

In batting a ball off a tee, the boy learns where he must stand in the batter's box to protect the plate with the big end of the bat, where the ball should be met when he breaks his wrists, and the angle of the bat when it meets the ball to hit it to different fields.

Mr. Rickey proved to several Dodger hitters the first year the tee was used that they couldn't cover home plate adequately from where they stood in the batter's box.

COVERING THE PLATE

He did this by putting a peg beside the rear foot of the batter and then having him try to hit balls off the tee when the tee was moved around to various corners of home plate and out in front of the plate.

Another thing the batters learned was to meet inside pitches at least one foot in front of the plate, even when the rear foot is against the back line of the batter's box.

This should prove helpful to coaches whose boys like to stand even with or in front of the batter's box. The coach can also point out that hitters like Stan Musial, Mickey Mantle, Hank Aaron, Nellie Fox, and Al Kaline stand as far away

from the pitchers as possible.

It's probable that most boys stand too far forward because they begin playing ball on sandlots without using batting boxes and, consequently, get into the habit of standing beside the plate as they bat.

However, a few move up because they hear the "old wife's tale" that they can hit the curve before it breaks by moving forward. The only way this can be done is by moving forward about 60 feet, as curves begin to break when they leave the pitcher's hand.

All of the advantage goes to the batter who stands in the back of the box since he has a longer time to judge the pitch before committing himself; he won't be swinging at pitches before they reach the strike zone; and he'll force the catcher to catch more pitches outside the strike zone and to make longer throws to the bases.

KEEP EYES ON BALL

The tee helps a player keep his eyes on the ball, take a full level swing and follow through to furnish his own power, and to take a short stride and stay in balance when swinging.

I've seen major league players break broom handles in attempting to swing at balls placed on batting tees for the first time.

As to power, the tee is an absolute measure of power for a player who has had some experience in hitting off a tee. One spring at Vero Beach this was proved to the satisfaction of the Dodger coaching staff when Duke Snider, Roy Campanella, Gil Hodges, Carl Furillo, and Jackie Robinson showed the same power ratio off the tee as they did in collecting extra base hits during the National League season.

This knowledge can be helpful to the coach who wants to know the relative power of his players. Everything else being equal he wants the long ball hitter in the lineup.

A boy who learns to hit off a tee, with proper coaching, shouldn't acquire the bad habits which plague so many hitters—namely, the arm hitch, the overstride and taking the eyes off the ball.

Of course a player must see live pitching in order to learn to time and follow the ball, particularly when the pitcher is throwing "breaking stuff." But the tee can be used in daily drills to help all young hitters, to give them familiarity with the bat and a pattern of good batting habits. No boy will become a "sweep hitter" who learns to hit off a tee.

In using the tee, the ball should be placed on a belt high tee for the first drills. If the boy is hitting the ball properly, he should be hitting line drives without the bat coming into contact with the tee. He should be hitting the ball in the middle.

If he's hitting fly balls, in all probability he's lifting his front shoulder; and if he's hitting the ball on the ground he's lowering the front shoulder. His shoulders should be kept level in order to give him maximum efficiency with the bat.

Coaches should know that approximately seven out of ten line drives are base hits, while only two out of ten ground balls become hits and only one out of ten flies fall safely in the major leagues.

Knowing this, Ted Kluszewski surprised an audience of coaches recently by saying that he attempts to hit line drives even though more flies become home runs. Ted says his high-fly home runs are "mistakes."

Once a boy learns to hit "belt high" line drives, the tee may be lowered to the knee level for practice in grooving swings at that height—the height which gives most batters the most trouble—and then raised to the "armpit" height for practice at that level.

One boy who practiced all winter swinging at knee high and chest high balls via a batting tee found in the spring that he could hit pitches at those heights much better than the previous season, but that he was missing pitches over the middle of the plate.

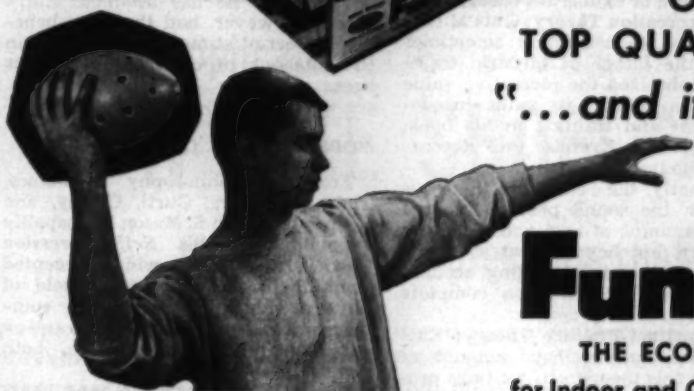
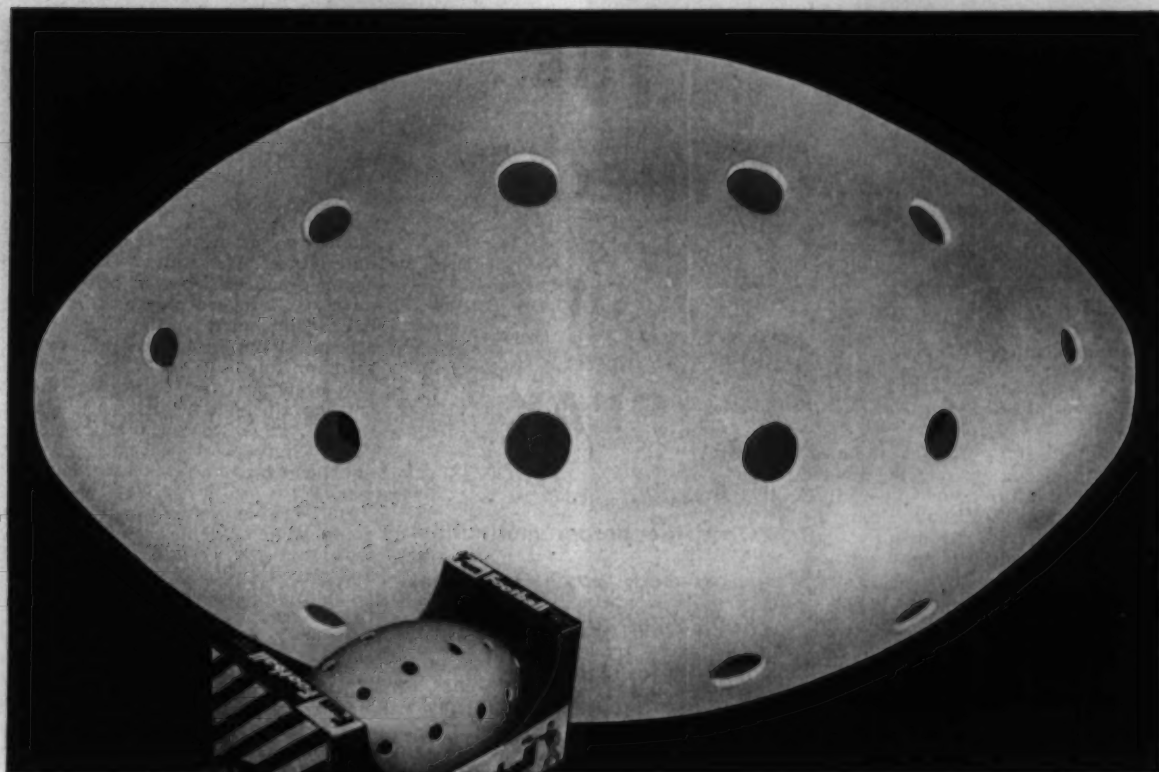
This prompted Fresno Thompson to comment that the boy shouldn't worry because Fresno suspected that the "fat" pitch was Yogi Berra's weakness, but nobody would groove a pitch to him or any other hitter to find out.

Boys like to do what they can do well and the tee can help them become better hitters.

AUTOMATIC PITCHER

While many schools can't afford an automatic pitching machine, it's a training device which also can prove very helpful. It can be particularly helpful in bunting drills, when the batters can get extra practice in aiming at a target one-third of the distance to first and third base about five feet inside the base line (the place to aim sacrifice bunts), in bunting for base hits, and in faking bunts and then slapping the ball over "drawn in" infielders.

If a coach has a batter who's a
(Concluded on page 61)



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THE THEORY OF PLAY

NO LONGER do physical educators have to crusade for equality in the modern school curriculum. Physical education has proven scientifically that it has definite relationships to education in general.

HISTORY OF PHYSICAL EDUCATION

Briefly, the story of physical education in this country may be divided into two eras: (a) before Thorndike, and (b) after Thorndike. From the beginning of recorded history until 1913, physical education, as we now know it, was plain physical training, with emphasis on the development of the body as a supplement to success in warfare.

Improvement was made under the influence of William James, and the profession stressed education as applied to habits of conduct, especially hygienic conduct and idealistic emotions. This period was followed by concentration on sports and games.

Thorndike changed the philosophy of most scientifically minded physical educators in about 1913. He published the first psychological educational treatise that made sense to most physical educators. Many groups experimented with the project method, creative approach, and the progressive education movement. Since 1938, physical education has been utilized as a "tool" in the academic program.

THEORIES OF PLAY

There are four traditional theories of play: (1) the surplus energy theory, (2) the recreation theory, (3) the instinct-practice theory, (4) recapitulation theory.

Many of the theories of play which follow are not open to attack so much from the standpoint of their inadequacy in explaining "all" aspects of the subject. Each new theory grew out of the inadequacies of the preceding theories. Let's then approach these theories sympathetically, in the spirit of the searcher after the truth, and we shall find more of truth than falsehood.

The Surplus Energy Theory: This is one of the oldest, simplest, and most widespread theories of play. Briefly, play is "blowing off steam"; children play because they're full of animal spirits, so overcharged with muscular energy that they cannot keep still. Schiller, German poet and philosopher (1759-1805), expressed the idea clearly

*Once the proper motivation
is aroused, play is indulged
in voluntarily in an effort
to satisfy it*

when he defined play as "The aimless expenditure of exuberant energy."¹

The Recreation Theory: Guts Muths, a German teacher who's sometimes called "the father of physical training," emphasized the recreative value of play as well as its value for development and training in his book, *Games for the Exercise and Recreation of Body and Mind*.

Succinctly, the recreation theory is based on the sound principle that a certain amount of rest and sleep are necessary, but beyond that a change to an active and interesting occupation is more restful than complete idleness.

The Instinct-Practice Theory: Karl Groos did an enormous amount of work on this theory. His writings produced a profound effect on the minds of educators by showing the tremendously wide range of play and its value to children, not only at the time of participation but as training for later life.

Groos' idea that play is a preparation for adult activities is doubtless true in case of animals and has considerable foundation in the case of primitive man, but its application to the civilized life of today has met with criticism.

The Recapitulation Theory: G. Stanley Hall was perhaps the most brilliant sponsor of the theory which ex-

plains play as the result of biological inheritance. He states "True play never practices what is phylogenetically new. . . . I regard play as the motor habits and spirit of the past of the race, persisting in the present, as rudimentary functions, akin to rudimentary organs. . . . In play every mood and movement is instinct with heredity. . . . Thus, we rehearse the activities of our ancestors, back we know not how far, and repeat their life work."²

Hall, in his enthusiasm for this point of view, went so far as to contend that the growing child passes through a series of stages which recapitulate the "culture epochs" in the maturation of the human race. For example, the child goes through, at certain ages, the animal, savage, nomad, agricultural, and tribal life stages.

The great bulk of recent research shows that the types of play a child engages in depends primarily upon what the environment has offered him and upon the degree of neuromuscular development he has attained. Hall's theory, however, had the very beneficial effect of stimulating research in the interests of children of various ages.

MODERN THEORY OF PLAY

From the philosophy of James, Thorndike, Carr, Curti, Cooley, and Reaney, Bernard S. Mason has capably expounded in his *Self-Expression Theory*, the most widely-accepted thinking in the professional field of physical education today.³ In summarization, he says:

1. Man is naturally active, both physically and mentally.

2. The human organism has a characteristic physiological and anatomical structure which limits its activity and predisposes it to certain lines of activity.

3. The physical fitness of the organism affects the kind of activity it engages in at any particular time.

4. The psychological inclinations of the organism predisposes it to certain types of play activity. These inclinations are the result of physiological needs, and of learned responses or habits and attitudes.

Man and child alike play to achieve, to create, to conquer, to acquire, to impress, and to win approval. As a consequence, he plays at activities in

¹Schiller, Friedrich: *Essays, Aesthetical and Philosophical*, London: Bell & Sons, 1875, p. 112.

²Hall, Stanley, H.: *Youth*, New York: D. Appleton & Co., 1906, p. 74.

³Mason, Bernard S.: *The Theory of Play*, New York: A. S. Barnes & Co., 1934, p. 81.

By **KENNETH G. SULLIVAN**, Phys Ed Director, Longmeadow, Mass.



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which he can accomplish these things with the abilities he possesses.

It's an old cliché that we enjoy best what we do successfully. Of course; any individual has many predispositions toward a very wide variety of activities; and what he engages in at any particular time depends on the strength of his various desires at the moment, these desires being dependent upon how he feels physically and what the environment offers in the way of positive and inhibiting stimuli at the moment.

Thorndike would reason that the response is to the total set of circumstances rather than to specific stimuli. Once the motive is aroused, play is indulged in voluntarily in an effort to satisfy it.

This theory is the basis to the writer's intramural sports program in the Longmeadow Public Schools. We teach the skills, rules, mode of conduct in the service or laboratory classes (compulsory gym classes), thus supplying the motivation to participate in the voluntary after-school sports program, which, incidentally, is a real test of the physical educator's teaching—gauging or evaluating its worth by the proportionate turnout in this optional phase of activity.

This philosophy is one of our staunch arguments to so-called economical and hind-sighted taxpayers who would do away with the teaching of physical education and the construction of facilities for such a program, their thinking being that kids don't have to be taught how to play, that it comes to them instinctively. Such people either are ignorant of the content of the program or were perhaps exposed to a haphazard, unscientific type of organized play activities during their student days.

THE LAWS OF LEARNING

Very early in the life of a student in a college of education comes the realization of the tremendous import the writings of John Dewey and Edward Thorndike have made. John Dewey, in his *School and Society*,⁴ set up a new standard by which to view the educational process. In his analysis the school is a social organization in which child activities are the major consideration.

Thorndike's psychology supported on the scientific side the philosophy behind the newer ideas in education. Learning was a process of forming bonds in the nervous system in which the laws of effect and exercise were operative.

Attitudes and appreciations became important in the process, and how a child feels toward a problem was a factor now to be respected. Habits, skills, knowledges, attitudes, and appreciations were to be viewed in relation to life, its conditions, processes, and problems. The way to learn to live in the future is to learn to live

today. Instead of thinking of activity as an exercise as such, it became a means by which individuals are educated.

Here, in this new philosophy, were tremendous implications in the field of physical education as well as other academical pursuits. Skill and satisfaction go together and hence the necessity to help individuals become skillful in activities which they are to continue in later life. This is the complete idea in the teaching of "carry-over" sports such as tennis, golf, archery, bowling, hiking, camping, badminton, that the modern physical educator of today includes in his program.

Education is a continuous process. Therefore, it's only wasted effort for the modern physical educator to teach such activities as wand or dumbbell drills that lead nowhere, that end in blind alleys. Contrast the former possibilities with such activities as tennis, swimming, calisthenics, tumbling and games.

The traditional notion that physical educators were to exercise a class becomes profoundly altered in the light of these views. Now, the instructor is engaged in providing the kind of situations in which worthwhile projects may be developed.

Has physical education a content, the traditionalist might ask? Just consider the mental content involved in learning an Indian folk dance in correlation with their study of a unit on the American Indian in the subject of social studies, and the answer is quite obvious.

In a treatise of this type, any physical educator would be remiss if mention wasn't made of character development. Physical education is perhaps the most fertile area in the field of general education for this phase of individual maturation.

Every authority the author has consulted is in perfect unanimity that character education in common with all education is governed by (1) the law of readiness or interest on the part of the individual himself, (2) the law of exercise or practice, and (3) the law of effect.

According to the law of readiness the child must want the desirable habit or attitude. It cannot be forced upon him by adult authority, discipline, or extrinsic incentives. From experience I've found this most valid. Never take up a new activity either directly before or after a school vacation.

This leads to the second law—practice and exercise. The boy on the football field learns sportsmanship only through wanting to be sportsmanlike and constantly practicing the same. The coach and the teacher train sportsmanship by helping the child want these qualities and, wanting them, to practice them.

It might be added that both from the viewpoint of a coach and a sports official that boys tend to ape the moral qualities of their leader. If their coach is lacking in high moral

(Continued on page 68)

⁴Dewey, John: *School and Society*, University of Chicago Press, 1923.

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Improved Coaching Results from Better Demonstrations

ONE of the most widely used coaching techniques is the demonstration method of showing how something is done. The demonstration may be:

1. The formal type, where a recognized expert or group of experts demonstrate, as at many coaching clinics, a skill or set of skills.

2. It may be the coach showing his quarterback the proper footwork on a certain play, or

3. It can be highly skilled members of the team demonstrating for others who are less advanced.

Properly executed, it often produces desired results. Improperly performed, there may be little learning by the observers.

Whatever the sport being demonstrated—football, basketball, tennis, or track, team or individual—the coach has one purpose in mind: to set up a correct method or pattern for his athletes to follow. In executing the demonstration, whether it be short or long, formal or informal, certain principles or positive factors must be utilized to assure best results.

1. Plan the demonstration, especially if it's a long one, and set up definite objectives, or specifics. Plan to make these as vivid as possible, and chart certain ways and means to reach your objectives.

Arrange for equipment and facilities to be ready, and observe a time schedule so that some points won't get too much attention while others receive too little. These are only a few of the factors which must be included in the planning of a demonstration.

2. Prepare your team for the demonstration. Be sure that every athlete is acquainted with the objectives and knows what to look for. If it's a demonstration of new plays for the football team, each player should know on what to concentrate his attention, especially as far as his position is concerned.

3. Also prepare the demonstrator or group, whichever is to perform

the demonstration. They should know the main objectives, how much time they have, what areas or phases to stress, the equipment and facilities available, the level of performance of the observer group, and whether they'll be called upon for explanations as well as performance.

Their skills should be high, and they should be in good enough condition to perform at a high rate of efficiency from start to finish. A demonstration loses some of its effectiveness where the performer noticeably slows down or loses accuracy because of fatigue.

4. Use educationally sound principles of learning and teaching. Consider the interest span of the learners and make the demonstration short or break it into more than one period. Twenty-minute periods on one phase of action usually are maximum. It's much better to have alternate demonstrations and practice periods than to have a long drawn-out single demonstration.

WHOLE-PART TECHNIQUE

Use the whole part technique as a general rule, and make the action as natural as possible. First show the skill or play at normal speed. Then if the need arises, slow the action down so that observers will more easily see different parts of the whole.

If necessary, the whole golf swing could be shown at regular speed, followed by the same action at about half speed. Finally, the coach probably would need to point out the proper stance, grip, back swing, hand action on the back swing, hip action, pause, down swing led by hips, uncocking of hands, striking the ball, and follow-through. Of course, some skills aren't as intricate as the golf swing and don't necessitate a complete breakdown.

5. Arrange the demonstration advantageously for both the demon-

strator and the observers. If the athlete cannot see well, he probably won't get everything desired from the performance. Neither will the demonstrator do his best if conditions aren't favorable.

Little learning may result where a basketball team is watching a demonstration in a gym in plain sight of the cheerleaders as they practice their routines. The persons performing the demonstration will probably also be at a disadvantage.

Note what positions are best for learning the particular skill being demonstrated. As an example, when a right-handed baseball player is demonstrating hitting, those watching can usually see best when situated on the side from which the bat is swung. The hitter cannot very well point out things to people who are behind him.

6. Repeat the performance if time permits. Athletes can hardly be expected to see everything at first glance. In fact, best results quite often occur where the athlete can try the skill being shown, then see the demonstration again.

Good learning situations usually consist of demonstrations, practice by the learner, demonstrations of shorter lengths, more practice by the learner, and so on until the demonstrations aren't needed. Repetition may be needed in nearly every phase or area of learning.

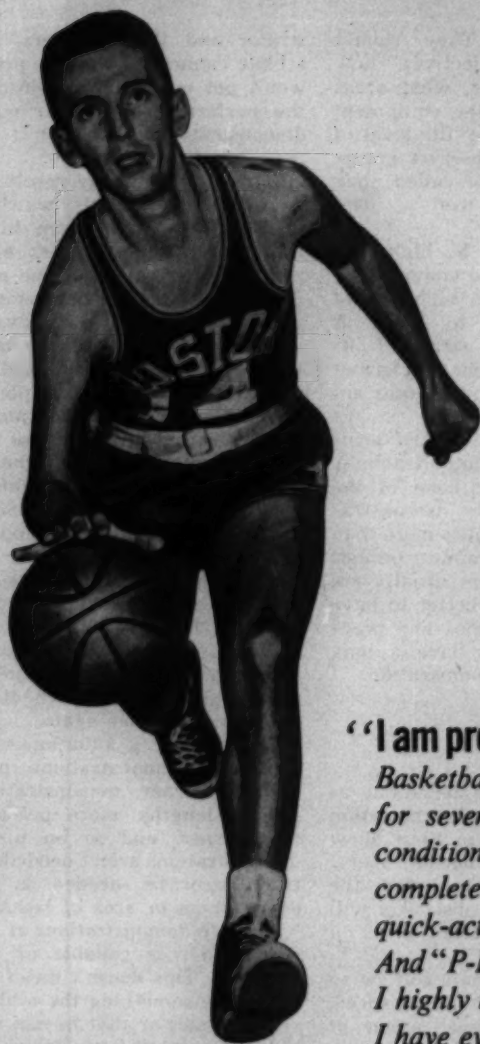
7. Keep demonstrations at a level the learner is capable of understanding. This doesn't mean that it should be something the athlete already knows or that he can do, but that it shouldn't be so far above his present status it holds no meaning for him. Use terminology that the observers use or recognize, or take time to define terms, as demonstration is mixed with explanation.

Remember there's no standard dictionary of all athletic terms. Different coaches often have entirely different meanings for the same terms. So, whenever explanations are added to the demonstration, avoid verbalisms.

(Continued on page 76)

By **KEITH PITCHFORD**, Intramural Director, Florida State University

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FLIGHT



IT'S IMPOSSIBLE to write a meaningful formula to explain or predict discus flight even under fixed conditions. The lift and drag of the discus change frequently in flight as the thrust velocity drops and the implement loses gyroscopic stability.

These forces, which are working against gravity, distort the flight path a great deal. Any turbulence in the air may upset the discus's flight attitude, destroying the validity of any fixed-formula approach.

With a complete photographic record of a given discus flight from take-off to landing, where the angle of the discus and its velocity at all times would be ascertainable, it would be possible to plot the path of the implement and write a formula for this particular flight, but it would be useless for any other throw.

A discus may depart the hand at 35° to 40°, but should it stall out in mid-air its angle of impact may be 80° to 90°. Any time the discus is tilted upward more than 30°, it's in a state of *CONTINUOUS STALL* from the moment it leaves the hand until it strikes the ground. The arc it now traverses will scarcely resemble the simple parabolic flight path of projectiles with which we are most familiar.

The flight path is parabolic, of course, but not a simple parabolic curve. One would need to know the flight path for the first half of the flight and another tracing from the last half of the flight.

Although of academic interest, the computation would be relatively

pointless. We cannot estimate the lift or average it; we can only observe its effect on the flight path of the implement.

CORRECT THROWING MECHANICS

To utilize the information obtained in the course of this investigation, we must take a different view of the throwing mechanics of the discus. The implications are quite obvious; the application not quite so simple.

In the illustration I've tried to diagram the action of discus throwing—as we conceive it and as it should be. In actuality, the purpose of the action to be described is to effectuate a low angle of inclination (attack) while at the same time achieving an optimal angle of projection. These angles aren't identical.

The natural path followed by the hand and the discus in swinging around the body, unless altered by the thrower, is a simple semicircle in which the shoulder acts as the fulcrum and the path described would approximate the line AB.

If the discus were carried throughout this arc by the thrower and then released, the angle of take-off would be very great, possibly 50° to 75°, but this isn't the case.

As the discus approaches point C, the good thrower begins to turn the wrist in a medial direction, or downward so to speak, which now permits the discus to traverse the path depicted by the line designated by the symbol X. This represents the

GENERALLY recognized as the world's greatest pole vaulting authority, Dr. Richard V. Ganslen formerly coached the field-event men at the U. of Illinois and is now a professor at the U. of Arkansas. His book, "Mechanics of the Pole Vault," is required reading in 40 countries! Recently, he turned his fine scientific mind to a study of the "Aerodynamic Factors Which Influence Discus Flight," and this article represents a summary of his findings.

path of the center of gravity of the discus or its true projection angle!

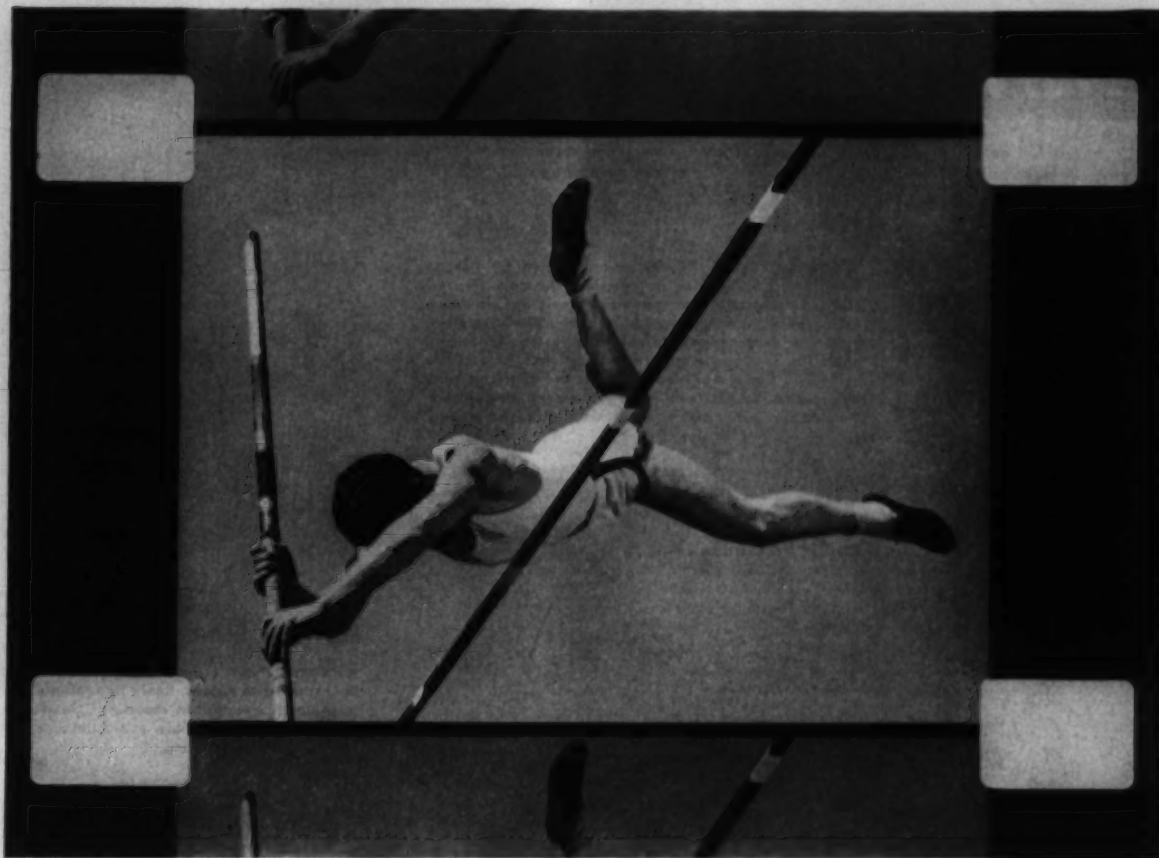
In order to take advantage of our new knowledge of the aerodynamics of flight, the thrower must rotate the leading edge of the discus medially until the leading edge of the discus now meets the air at an angle not greater than 30° and probably nearer 25°. This tilt of the discus will result in a difference in angle between the discus face and the true projection angle of 10° or 15°.

The only possible way that the thrower can carry this out mechanically is to have the wrist and hand moving in the direction CZ, which will involve resolution of two forces—a gradual vertical displacement of the arm led by the wrist at the same instant the discus is tending to fly straight ahead.

In other words, the throw involves vertical displacement to counteract the linear momentum of the implement and DOES NOT INVOLVE A SIMPLE SWINGING AROUND AND LETTING GO OF THE DISCUS.

(Concluded on page 77)

By DR. RICHARD V. GANSLER, University of Arkansas



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• **MERCURY VAPOR FLOODLIGHT.** Steber's aluminum 24" diameter enclosed flood includes thermal shock and impact resistant lens, stainless steel lens ring and hinge, stainless steel clips. Thorough gasketing makes each unit weatherproof.

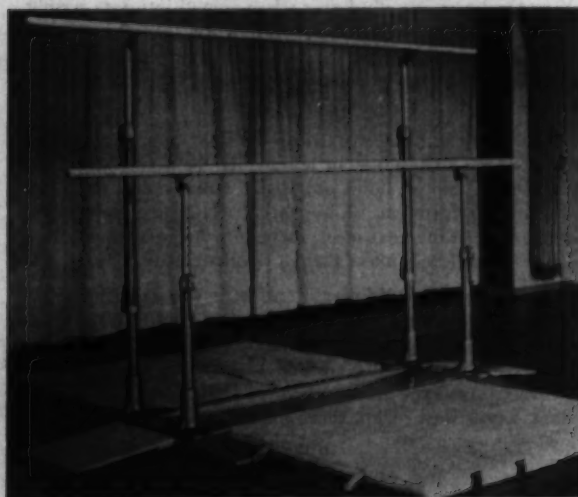


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By HERMAN L. MASIN

Editor, Scholastic Coach



Single—the sublime state for which every married man yearns.

Triple Play—a lightninglike sequence of events after losing your big game wherein your children hiss you, your community ostracizes you, and your school fires you.

Home Run—when the little woman, after taking your guff all season, packs up and runs to mother.

Sacrifice—the sanity you have to give up to go into coaching.

Fadeaway—what old soldiers who never die, do slowly.

Hook Slide—a trombone that's seen better days.

Left Field—Moscow, Russia.

Texas Leaguer—the kind of hit which fills coaches' lunatic asylums.



Double Steal—when your wallet and watch are lifted at the same time.

First Base—what you never can get to on your first date with a virtuous maiden.

Foul line—the patois of the bleacherites.

Curve—what every principal throws when you ask for a raise.

Choke-Up—what every self-respecting coach does upon receiving a raise.

Screwball—the sportswriter who predicts you'll have a winning season.

Grounders—smog, lightning, and fog to the air lines.

Rubber—a trainer, a game of bridge, a pencil end, or a coach who believes in rabbit's feet.

Batter's Box—where the little woman stores her dough.

Clean-Up Man—the fellow who comes around once a week to restore order in the household.

Lead-Off Man—first tenor in a choir.

Extra Base—a fellow who beats his wife is this.

Stretch Motion—what sportswriters wait for publicity men to do when the dinner bill comes around.

Suicide Squeeze—demanding a raise after a losing season.

Hit-and-Run—what to do against a big guy who picks on you.

Umpire—an arrogant blind man who persecutes clean-cut American boys.

Fat Pitch—the corned beef in a cheap delicatessen.

Brush Him Back—how to handle a jaywalker who crosses in front of you.

Wasted Pitch—what your line amounts to when the girl says no.

Clutch Hitter—remember Joey Maxim?

Cut-Off—favorite tactic of the woman driver.

Pitcher—an object with long ears holding large quantities of beverages, often mistaken for a coach.

Seventh Inning Stretch—girdle-adjustment time on Ladies Day.

Grass Cutter—the instrument Junior can never find whenever the lawn needs trimming.

One-Hand Stab—the life-saving grab at a strap in the subway rush hour.

Line Drive—Sis's annual plea for a telephone of her own.

Crouch Stance—the position assumed by coaches whenever the sports scribes start hurling brick-bats.

Pop Fly—a ridiculous piece of fishing gear with which Dad is remembered on Father's Day.

Pick-Up—major activity of sailors on shore leave.

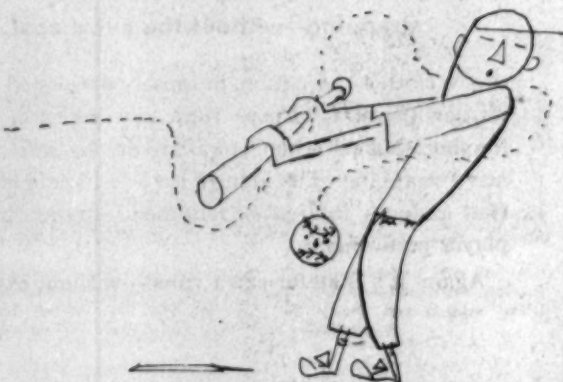
Deliberate Walk—whenever the kids start yowling and the little woman starts nagging, hubby takes one of these.

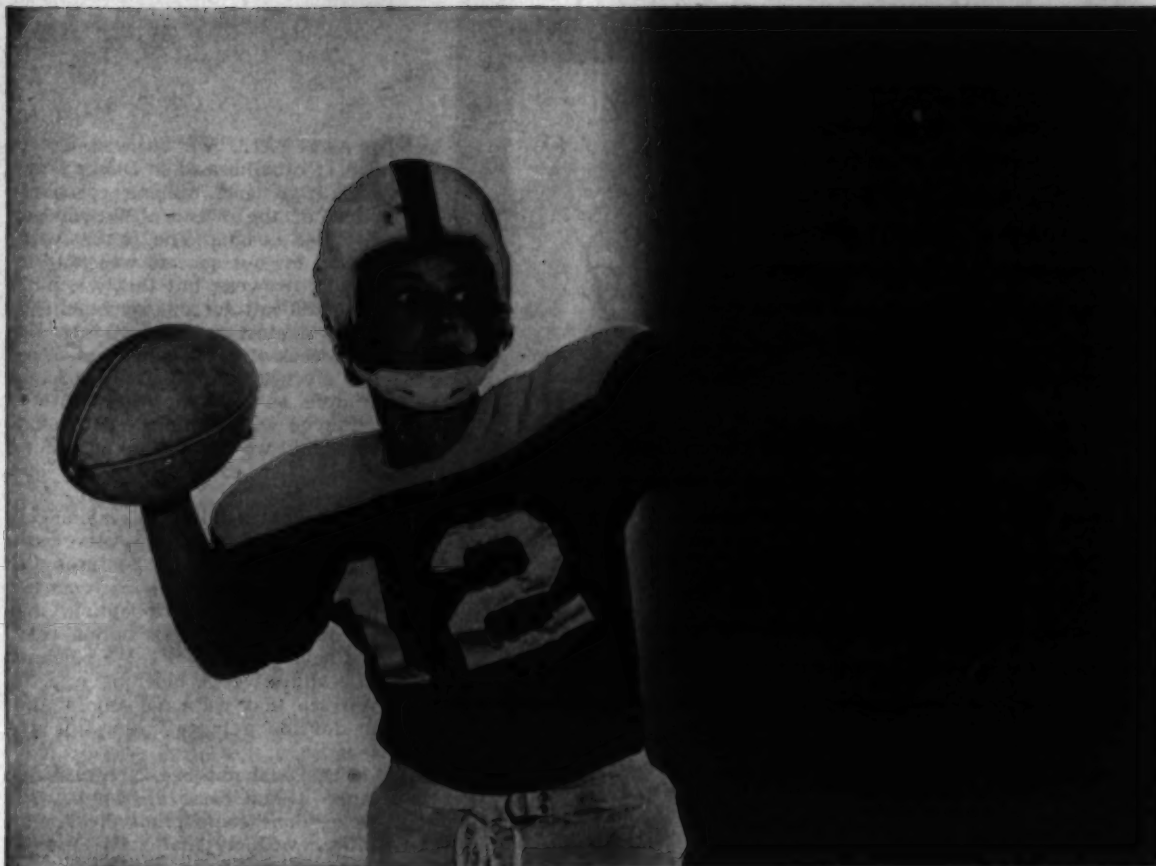
Sign Stealer—a juvenile delinquent who collects traffic and park stanchions.

Knuckle Ball—a picnic for the pig gourmet.

Shortstop—jamming on the breaks when the light suddenly turns red.

Bunt—what every red-blooded American slugger always messes up when you ask him to do it.





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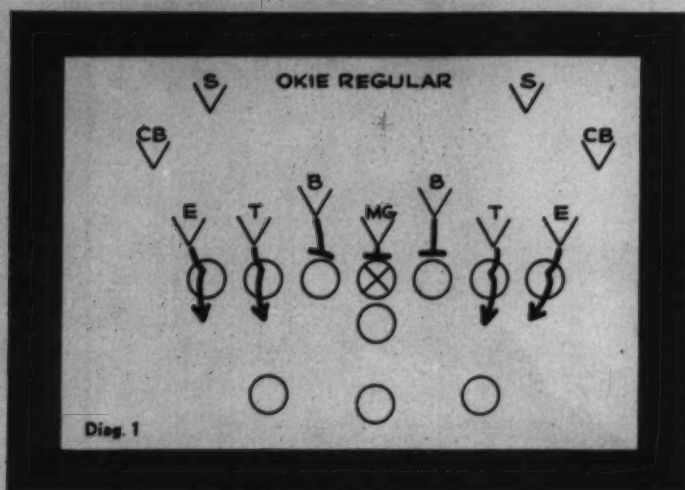
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Multiple Defense from the Oklahoma

5-4-2

LAST FALL we enjoyed a fine football season at Dobbs Ferry High and became co-champions of the Western Westchester Football League. The fundamental reason for our success was not our scoring prowess, but that we made it so difficult for our opponents to score against us. Going into the final week of our 8-game season, we had given up but 5 points per game on defense.

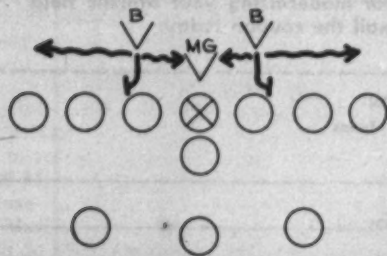
Maybe we do things a bit in reverse, but we try to keep our offensive system extremely simple and then devote most of our time to a more complex defensive system. Our offense consists of the very basic Split-T Series which features the halfback dives, fullback counter, pitchout, quarterback option, and the halfback run-pass option play. We have one simple 1-2-3 blocking rule and a wedge blocking rule. So you see that we have ample time to develop a large battery of defenses.

The Oklahoma 5-4-2 regular defense is our basic alignment. But we've done some relatively simple things with it that have proved rather complicated for our opponents to handle.

First I'd like to explain just how we played our Okie-regular. This must be learned cold before you try to advance to the stunts and other alignments in the defensive battery. We look upon the middle guard, tackles, ends, and inside linebackers as the forcing unit of our defense. These lads must put pressure on the offense "right now" in order to make the offense commit themselves.

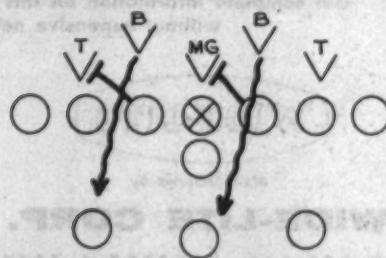
We regard the two corner-backers

LINEBACKERS KEYING GUARDS BLOCK AND PURSUIT



Diag. 2A

LINEBACKERS REACTING TO POWER BLOCKS



Diag. 2B

and the twin safeties as the containing portion of our defense. These lads are not concerned so much with stopping the five-yard gain as with stopping the "home run ball," or easy touchdown.

They must be made to realize that they are the last line of defense, and a mistake by any one of them can result in a quick td by the opponent (Diag. 1).

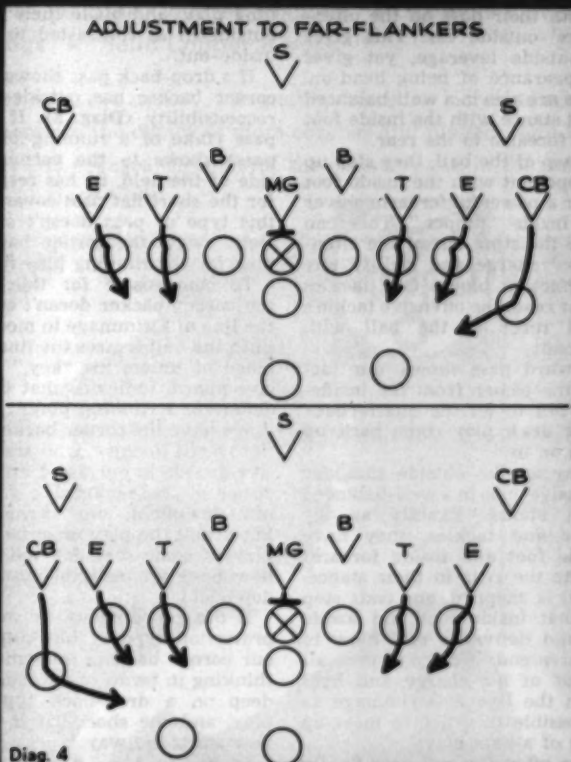
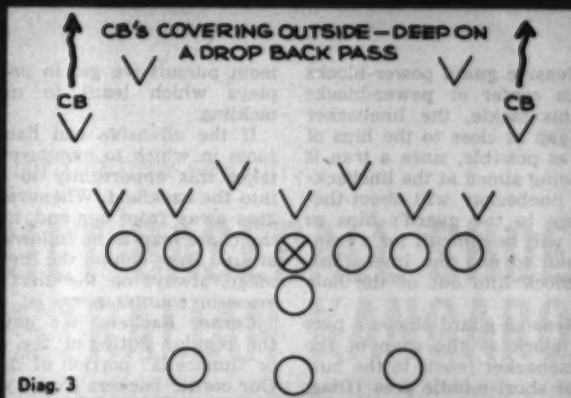
Middle Guard plays head-on the offensive center (in a balanced-line attack), and one yard off the ball in a well-balanced three point stance. He plays it "soft" most of the time, using hand-shivers to control the offensive center's charge.

This boy must be strong enough in the arms and shoulders not to allow the center to get to his body and cut him off to either side, for he must control the gaps to either side of the center. You must have a very determined lad here with good reactions, since he's the only man in the entire defensive alignment who must control two offensive gaps.

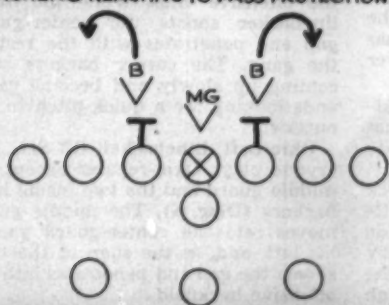
At the snap of the ball, the middle guard must key the center's block and then pursue the play. He must be continually on the watch for the fullback counter and the draw play and therefore he cannot begin his defensive pursuit too quickly. If a drop-back pass shows itself, he rushes the passer immediately.

Inside Linebackers play off the outside shoulder of the offensive guards and two yards off the line of scrimmage. As the ball is snapped, the linebackers key the guard's block. If the guard fires-out at the linebacker, the linebacker steps up with his inside foot and meets the guard on the guard's outside shoulder with an inside forearm shiver. He then fights the guard's block and takes the proper pursuit angle (Diag. 2A).

Inside Linebackers play off the outside shoulder of the offensive guards and two yards off the line of scrimmage. As the ball is snapped, the linebackers key the guard's block. If the guard fires-out at the linebacker, the linebacker steps up with his inside foot and meets the guard on the guard's outside shoulder with an inside forearm shiver. He then fights the guard's block and takes the proper pursuit angle (Diag. 2A).



LINEBACKERS REACTING TO PASS PROTECTION BLOCKS



By **PETER T. DYER**

Coach, Dobbs Ferry (N. Y.) High School

If the offensive guard power-blocks in with his center or power-blocks out with his tackle, the linebacker shoots-the-gap as close to the hips of the guard as possible, since a trap is probably being aimed at the linebacker. If the linebacker will shoot-the-gap as close to the guard's hips as possible, it will be difficult for a trapping lineman to find the linebacker, let alone block him out of the hole (Diag. 2B).

If the offensive guard shows a pass protection block at the snap of the ball, the linebacker reacts to the button-hook, or short-middle area (Diag. 2C).

Tackles play on the offensive tackles, with their nose on the offensive tackles' outside ear. This gives our boy outside leverage, yet gives all the appearance of being head-on. Our tackles are also in a well-balanced three-point stance with the inside foot and inside forearm to the rear.

At the snap of the ball, they step up into the opponent with the inside foot and deliver a powerful forearm shiver with the inside "flipper." This can really take the sting out of the offensive tackles' charge and nullify any kind of effective block. Our tackles then key, or read, the offensive tackle's block and react to the ball with proper pursuit.

If a forward pass shows, our tackles rush the passer from the inside-out, so as not to let the quarterback or fullback draw play come back up the middle on us.

Ends play on the outside shoulder of the offensive ends in a well-balanced three-point stance. Exactly as the linebackers and tackles, they have their inside foot and inside forearm "flippers" to the rear in their stance. As the ball is snapped, our ends step up with that inside foot and inside "flipper" and deliver a real blow to that offensive end. We try to take all the fire out of his charge and hold him up on the line of scrimmage as long as possible in order to mess up the timing of a pass play.

After the offensive end does finally get away and a pass shows itself, our ends rush the passer from the outside-in and try to force the passer into our rushing tackles.

Unlike end play in most defenses, our ends handle running plays from the inside-out. If the running play comes to the end's side of the field, our end never penetrates into the backfield deeper than the ball. If, for instance, the quarterback comes down the line of scrimmage with the ball, our end is instructed to allow the ball-carrier to get outside of him as long as the ball-carrier isn't up over the line of scrimmage.

Our end plays the ball-carrier from inside-out, stringing him out of running room toward the sideline. Our end won't attempt to make the tackle unless the ball-carrier turns upfield and tries to come across the line of scrimmage. We feel that as long as we can make the ball-carrier run laterally across the field, the harder it is for him to turn our flank and the more

team pursuit we get in on the wide plays which leads to more gang tackling.

If the offensive end flanks to get room in which to maneuver, our end takes this opportunity to "red dog" into the backfield. Whenever the play goes away from our end, he becomes the chase man as he follows the plays around from behind the line of scrimmage, always on the alert for a reverse or counter play.

Corner Backers. We now turn to the regular duties of the containing or "umbrella" portion of the defense. Our corner backers play 3 yards back and 5 yards outside the ends. They have outside responsibility on a running play, and make their play from outside-in as contrasted to the end's inside-out.

If a drop-back pass shows itself, the corner backer has outside-deep pass responsibility (Diag. 3). If an action pass (fake of a running play before pass) shows to the corner backer's side of the field, he has responsibility for the short flat pass coverage. Since this type of pass doesn't show itself right away, the corner backer must play for the running play first.

To compensate for this, however, the corner backer doesn't come up to the line of scrimmage to meet the play until the ball crosses the line of scrimmage or unless his "key," the offensive guard, indicates that the play is definitely a running play.

We have the corner backers key the uncovered linemen, who are the offensive guards in our 5-4-2 alignment. If either of those offensive guards fire-out downfield, our corner backers know that the play must be a running play of some sort, for the opponents now have an ineligible pass receiver downfield.

If the guard comes up into a pass-protection type of blocking position, our corner backers immediately start thinking in terms of covering outside-deep on a drop-back type of pass play, and the short flat if a running flow starts his way.

If the running flow "goes away" from the corner backer, he starts rotating to the strong side of the field very, very slowly, looking back his way for a possible reverse play or cross-field pass. He must think in terms of himself being the "contain man" on the weak side of the field. Also, he must never cross the middle of the defensive field (spot from where the ball was snapped by the offensive center) until the ball has either been thrown or run up over the line of scrimmage.

We used the corner backers to adjust to flankers, and we found that almost no adjustments were really necessary. We make absolutely no adjustment at all to a split end, fullback flanker to either side, and near halfback flanker to either side. We do adjust to the far halfback flanker by bringing the corner backer up on the line of scrimmage and playing through the outside shoulder of the flanker, much as you would against a single-wing team (Diag. 4). The rest of the

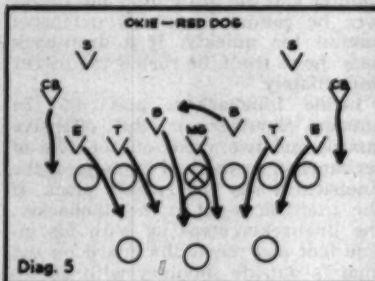
"umbrella" rotates to the strong side.

We feel that in this particular flanker set, the offense can get to the outside quickly and with power to the strong side, so we rotate in this manner to compensate. We also feel that no other flanker set can get to the outside as quickly and powerfully as the far-flanker set, yet there's no great threat to the weak side. So we can well afford to rotate.

In any other type of flanker set, such as the fullback flanker or near halfback flanker, there's a good threat to the strong side to be sure, but there's still an equally good threat to the weak side. Therefore, I don't feel that we can afford to rotate toward the flanker under these circumstances.

Twin Safeties line up 7 yards off the ball on the inside shoulder of the offensive ends. These lads also key the uncovered offensive linemen (far offensive guard). If the guard fires downfield, our safety knows that the play cannot be a pass play. So he can come up fast to support inside his corner backer if the flow is coming his way, or he can start to rotate slowly if the play goes away from him. When either safety man is in the slightest doubt as to what to do, he must play pass defense first, last, and always, as we play strictly a zone defense in the secondary.

Now let's move on to the various stunts and alignment modifications that proved most helpful to us as a change-of-pace to our Okie-regular.



Okie-Red Dog. We show our Okie-regular, and on the snap of the ball, the defense becomes a gap 8, as shown in Diag. 5. The more agile and better coordinated of the two inside linebackers flares over the short middle looking for a quickie-pass to one of the offensive ends, while the other linebacker shoots the center-guard gap and penetrates with the rest of the gang. The corner backers start coming up slowly and become gap-8 ends looking for a quick-pitch to the outside.

Okie-Left Linebacker Off-Set. Everyone plays Okie-regular except the middle guard and the two inside linebackers (Diag. 6). The middle guard moves into the center-guard gap to his left, and, at the snap of the ball, shoots the gap and penetrates into the offensive backfield.

If the offense has planned to run to this side of the field, the offensive right guard must block in on the

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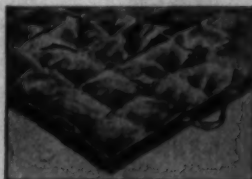
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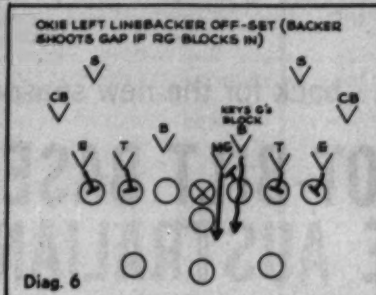


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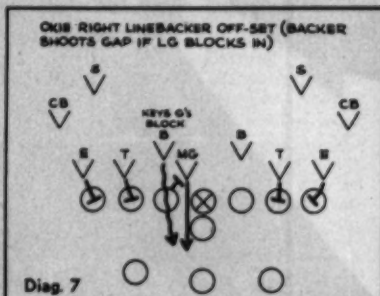
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shooting middle guard to keep the defensive player out of the quarterback's lap. The offensive center is in an awkward position to try to make the block, while the offensive right tackle is being kept well occupied by our defensive tackle. So the only one who can and must make the block is the right guard. As soon as he does this, there's a real wide avenue for the left linebacker to fire through and land right into the middle of the play before it really gets a chance to develop.

During this stunt the linebacker still must exercise his key of the offensive right guard; for if the offensive play is not being run to the off-set side of the field, there's no reason for the offensive right guard to block in on the middle guard. If the play were going to the other side of the line, the center would then have an easy angle on the middle guard and the offensive right guard would fire-out on the linebacker and cut off his pursuit to the active side of the field if the linebacker blindly shot what he thought would be a gap in the offense.

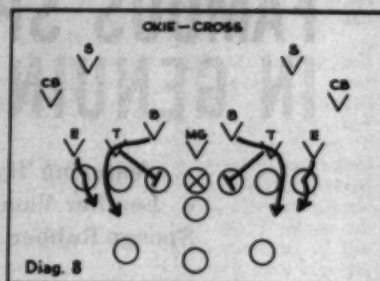
So the importance of the linebacker exercising his okie-regular key cannot be stressed too much. The other inside linebacker comes over from the outside shoulder of his "key guard" (offensive LG) to nose-up on him so that he cannot be cut off from the middle should the offensive quarterback "change-up" to a sneak up the middle when he spots this change in regular defensive alignment.



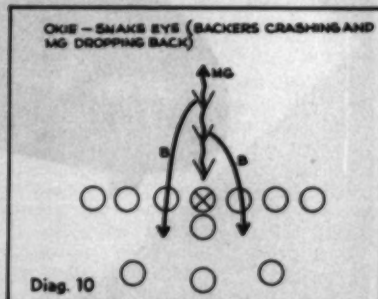
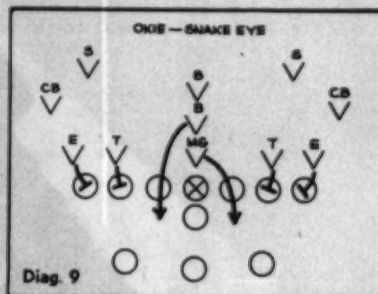
Okie-Right Linebacker Off-Set (Diag. 7). This is exactly the same stunt as in **Diag. 6**, but off-setting the right inside linebacker to the other side of the field.

Okie-Cross. This is a most effective stunt which ties up the offense quite well between the tackles, and allows for penetration by your linebackers into the offensive backfield

(**Diag. 8**). In this stunt everyone plays Okie-regular except the inside linebackers and the tackles. The tackles "cheat over" to head-on the offensive tackles and off the line of scrimmage a foot and a half to insure lateral movement.



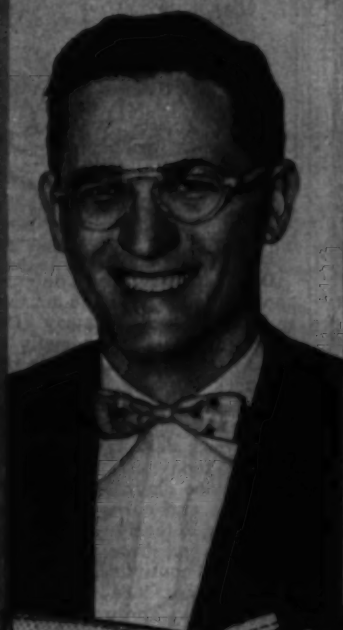
At the snap, the defensive tackles crash through the ribs of the offensive guards with all their might in an attempt to have a "meeting of the minds" with the quarterback. The inside linebackers loop to the outside of their tackles' crash and gain penetration into the opponent's backfield. There's usually quite a gap for the linebacker to get through, as the offensive tackle will react by following the defensive tackle's crash down the line of scrimmage.



Okie-Snake Eye. On this stunt, everyone plays okie-regular except the middle guard and the two inside linebackers (**Diag. 9**). These lads are in a tandem of three. At the snap, the middle guard and one linebacker stunt right and left into the outside shoulders of the offensive guards. Both linebackers may also "red dog" while the middle guard shivers the center and drops straight back over the middle (**Diag. 10**). The call is given by the middle man in the tandem by

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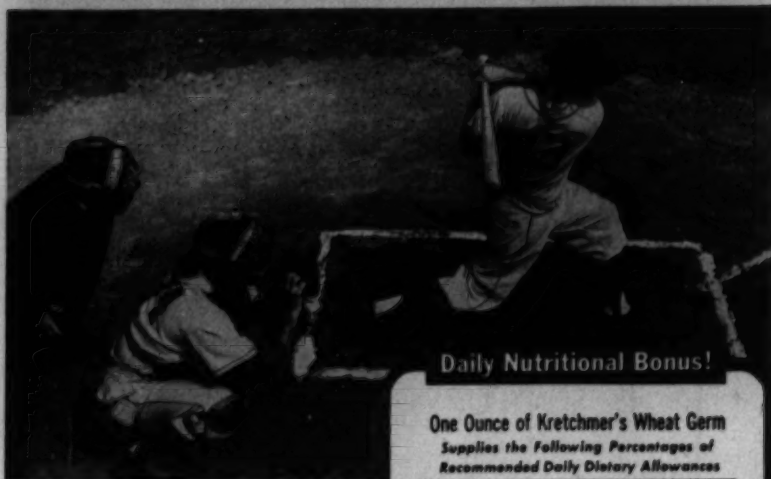
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Vitamin C	4.8%	3.6%	4.8%	4.8%
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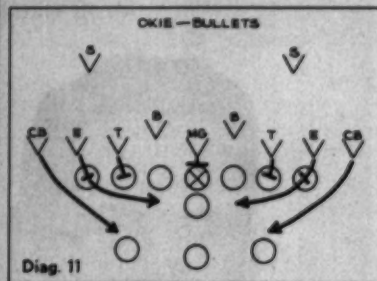
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NEW HYDE PARK, N. Y.

way of leg taps to his teammate in front of him and the teammate behind him.

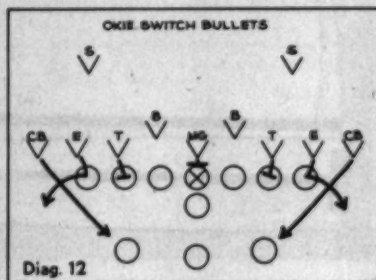


Diag. 11

Okie - Bullets. This defensive call can do a lot of good and get the offense in a big hole right away (Diag. 11). We find that it's especially effective against a team that likes to throw the halfback running pass. It stops the play before it gets a chance to develop, and, personally, I believe this is the most devastating single play in football today.

Everyone plays Okie-regular except the ends and corner backers. At the snap, the defensive end collapses the offensive end down the line of scrimmage, and continues down the line until he comes face to face with the quarterback. The quarterback is now forced to pitch very early or get himself tackled with the ball still in his possession.

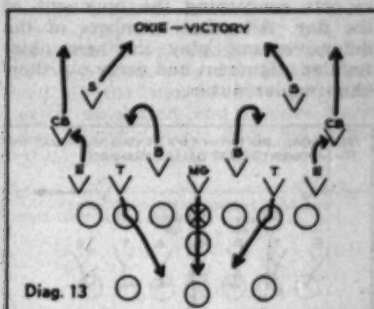
The corner backer sneaks up on the line of scrimmage just before the ball is snapped, and, at the snap, "red dogs" to a point where the near halfback lined up before the ball was snapped (in a straight T-formation). The "bullets corner backer" will be on the forward passing halfback at the instant the halfback receives the ball and dump him for a loss. He may even get his hands on the pitchout.



Diag. 12

Okie - Switch Bullets. The switch-bullets call accomplishes the same thing as the bullets call, except it gives greater protection to the outside in case the offense has an effective quick-pitch play to a very fast halfback. The corner backer still runs his bullets path, but the end now flares out to protect the outside instead of hunting down the quarterback (Diag. 12).

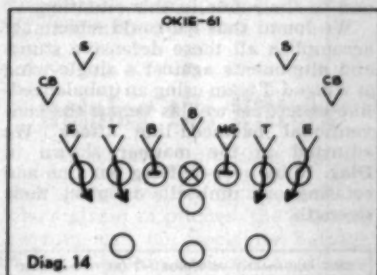
Okie - Victory. Anytime we feel that the opponent has to go for a score or a long-gainer, we go into okie-victory (Diag. 13). Everyone



plays okie-regular pass defense and exercises their proper keys. The middle guard and two defensive tackles penetrate into the opponent's backfield, expecting to rush the passer or break up a reverse or double-reverse.

The ends fly into the flat areas to take short outside pass coverage responsibility. They're now also in fine position to meet a sweep or reverse to their side, and are also in good position to contain a screen pass play for a short gain. The corner backers take outside deep pass responsibilities, and the twin safeties take the deep inside pass responsibilities. The inside linebackers retreat to the short-middle area.

We therefore have 3 men penetrating and forcing up front, and 8 men containing against the long-gainer. Yes, this is an easy defense to gain seven or eight yards against. But we use okie-victory only when the opponent needs the "home run" to get back into the ball game.



Okie-61. This defense is a 6-1 umbrella. We get into it by moving only the middle guard and the two inside linebackers (Diag. 14). Our middle guard moves over to his left and head-on the offensive right guard, playing square through the guard and then taking a proper pursuit angle after a delayed "check" that nothing is coming up the middle.

The right inside linebacker comes up head-on the offensive left guard in a three-point stance on the line of scrimmage. He also plays through the guard and pursues, just as the middle guard does on the other side of the line. The left linebacker moves over to his right and head-on the offensive center, thus setting-up the 6-1-umbrella alignment.

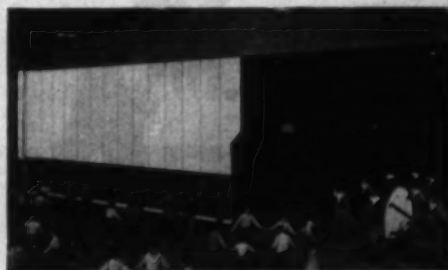
The linebacker keys either the center's block, the quarterback or the fullback, depending on the scouting

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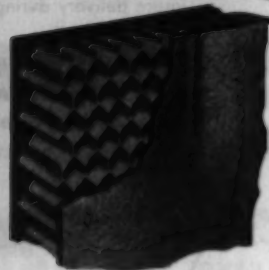
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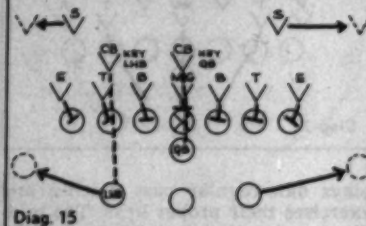
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reports concerning the opponent of the day. All other members of the defensive unit play in their okie-regular alignment and carry out their okie-regular duties.

OKIE GOAL LINE (WITH CB'S KEYING AND REACTING TO OPPONENT'S BEST BALL-CARRIERS)



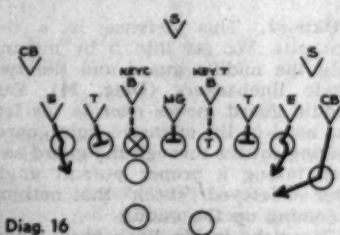
Diag. 15

Okie-Goal-Line. We use this defense when the opponent has penetrated to or comes in possession within our 10-yard-line (Diag. 15). The two inside linebackers come up into the line and head-on the offensive guards. Now, each offensive lineman has a man playing nose-up on him. All seven defensive men up front are down in a four-point stance and playing it "tough" and through the man in front of them. The defensive charge is low and penetrating all down the line.

The two corner backers come in and head-on the two most likely ball-carriers. They key these men and go exactly where they go at the snap. Scouting reports will tell you just what men are the most likely ball-carriers in this situation. The twin-safeties play four yards off the line of scrimmage and a bit wider than usual, covering any flanker or split end to their side in this situation.

We found that we could effectively accomplish all these defensive stunts and alignments against a single-wing or winged-T team using an unbalanced-line attack, as well as versus the conventional balanced-line attack. We adjusted in the manner shown in Diag. 16 by over-shifting our line and rotating our umbrella to meet their strength.

OKIE ALIGNMENT VS WINGED-T (ROTATING INTO A 3-DEEP SECONDARY)



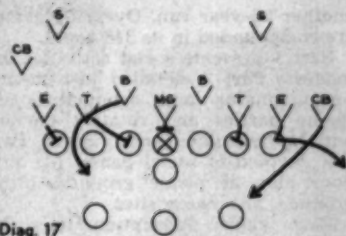
Diag. 16

Note the left corner backer comes up onto the line of scrimmage and plays through the outside shoulder of the offensive wingback, thus changing the 5-4-2 alignment into a 6-2-2-1 versus the unbalanced line. The alignment changes due to the simple rotation, but the over-all defensive philosophy remains intact and so do the duties of the defensive players.

This battery of defense may sound

awfully tough to learn from the defensive player's standpoint, but we found that it was easily absorbed by the boys. This was due to the fact that all the movements are very closely associated and require very little memory work after the okie-regular is thoroughly learned.

COMBINING TWO STUNTS (OKIE-CROSS AND OKIE-SWITCH BULLETS)



The multiple battery of defenses proved especially troublesome to teams using offensive rule blocking. It also hurt clubs that featured cross-blocking, trap blocking, and influence blocking. True, it's a guessing game to some extent. But the defenses are fundamentally sound and, at all times, afford maximum protection against the dreaded "home run ball." What's more, seven of the defenses can be used in combination with one another (Diag. 17).

In closing, I'd like to state that the basic ideas for this type of multiple defense were gleaned from lectures it was my privilege to hear over the past two years from Oklahoma's Bud Wilkinson, South Carolina's Warren Giese, Navy's Eddie Erdelatz, and Miami's Andy Gustafson.

Helping the Hitters

(Continued from page 34)

poor judge of the strike zone or who's afraid of pitches, the pitching machine can be especially helpful. When a batter sees more pitches, he gains confidence and confidence is a great asset to a batter.

When no pitching machine is available, "fearful" hitters and wild swingers can be helped by having them take their batting stance near a home plate in the bull pen against a pitcher who's warming up.

The batter must not swing at the ball, but should judge the pitch by calling "strike" or "ball" as it crosses the plate. The catcher can tell him whether he has judged it correctly.

These are a few of the drills which have helped successful high school, college, and professional coaches. They're sound from a scientific standpoint and should prove valuable to any coach who wants to improve his hitters. And who doesn't?



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New Books on the Sport Shelf

- **NEW YMCA AQUATIC WORK BOOK.**
Edited by Harold T. Friermood. New York: Association Press. \$11.50.

THIS handsome 11 by 8½ inch volume offers a complete, practical guide to creative administration of the national YMCA aquatic program.

A sturdy, three-ring bound affair, enabling the individual to adapt and expand the material as he sees fit, the book contains administrative suggestions on the following subjects:

Understanding and operating an aquatic program in the YMCA; materials used; new program emphases from the Third National YMCA Aquatic Conference; aquatic program in the small nonequipment Y, philosophy of the program; history and development; learn-to-swim campaign; recognition of heroic service; principles of construction and maintenance of indoor pools; YMCA swimming pools; national YMCA swimming and diving championships; progressive steps in the national program.

The book can't help but provide the stimulus for even greater effectiveness in serving the needs and interests of individuals and groups within and outside the YMCA's.

- **SO YOU WANT TO BE A HIGH JUMPER.**
By Lloyd C. (Bud) Winter. Pp. 69. Illustrated—drawings. San Francisco: Fearon Publishers. \$1.65.

THE astute track coach of San Jose State College—one of the best in the business—has done a first-rate job of analyzing tersely and meatily all the elements that go into the making of a crackerjack high jumper.

With the use of simple but effective drawings, he expounds a complete teaching program, breaking down all the basic styles of jumping—western roll, dive western, straddle, and dive straddle. The emphasis is on working with beginners—which is right up the coach's alley.

Superlative sections on training, training schedules, types of workouts, and do's and don'ts round out the text, making it a tasty manual for both coaches and athletes.

- **SOCIAL GAMES FOR RECREATION**
(2nd Edition). By Evelynne Borst and Elmer D. Mitchell. Pp. 348. New York: The Ronald Press Co. \$5.50.

A BEST SELLER since 1935, *Social Games* has become a bible for gym class teachers, recreation directors, camp counselors, college students and many others.

Extensively revised and reorganized, the new edition seems good for

another 25-year run. Over 700 games are compounded in its 348 pages.

Part 1 presents social activities for indoors; Part 2, detailed instructions for arranging and conducting ten theme parties and rotative parties, with appropriate games; while Part 3 is devoted to social games for outdoor play at picnic grounds, playgrounds, and camp sites.

Each game description tells the leader what materials he needs, the basic starting formation, and the rules. A chapter-by-chapter index, wherein the games are grouped by type, will prove a boon in helping leaders quickly locate the games they want to use.

- **RUGBY UNION FOOTBALL.** Pp. 48. Illustrated. 75¢.

THIS fine English Know-the-Game Handbook is divided into two parts—What to Teach and How to Teach It, with a good chapter on general principles of coaching. Available from Sport-Shelf, Box 634, New Rochelle, N. Y.

NEW FILMS

A NEW 16-mm. sound film on trampolining and diving, produced by Universal-International, is now available to schools, camps, and clubs from Nissen Trampoline Co.

Whatever Goes Up . . ., which has a running time of 15 minutes, features expert and Olympic diving champions and the Nissen Exhibition Team that appeared at the Brussels World's Fair and the German Turnfest. Among the technical highlights are slow-motion sequences ideal for class study, "doubles" work, and trampolining for girls.

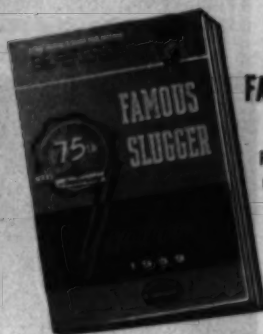
Arrangements for scheduling the film for group showings may be made by writing or calling Nissen Trampoline Co., 200 A Ave., N.W., Cedar Rapids, Iowa.

NOW available from Little League Headquarters, 120 West Fourth St., Williamsport, Pa., are two 35-mm. film strips available at \$3.50 each for showing on standard film strip projectors.

How to Help Hitters provides a thorough presentation of the fundamentals of batting and valuable suggestions on ways in which managers and coaches can improve their hitters.

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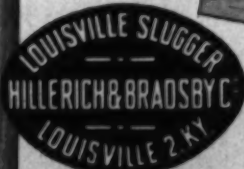
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Touchdown Scorers

(Continued from page 11)

The following plays were culled by Scholastic Coach from outstanding college and professional games played last season. With a little imagination, they may be easily adapted to schoolboy play.



VILLANOVA I FORMATION MIDDLE WEDGE

Double-team blocking in center of line (LG and C to left and RG and LH to right) wedges open hole. T's shoot through to screen linebackers, RH takes hand-off and blasts through middle behind FB.



BALTIMORE COLTS FAKE DRAW

QB fakes draw to FB, who plunges into line. Ball is then handed to RH who hesitates for moment, allowing RG to pull out and lead play with C filling gap. If defense is fooled by draw, RH whips to outside. If defense waits, RH drives through hole opened by LG and LT.



ALABAMA CLOSE HUDDLE

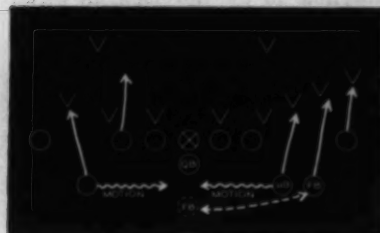
Set up only 2 yds. from line, this huddle enables team to snap ball before de-

fense can adjust, also conserves energy. C sets up 2 yds. back, while others form tight triangle with QB at middle of base—thus being shielded from defense. Hand signals are used to transmit plays.



N. Y. GIANTS SCREEN PASS OFF FAKE DRAW

Following snap, QB steps back and fakes hand-off to FB, who drives to right. LH moves forward with FB to add deception, suddenly cuts to left near line. QB shoots quick pass to LH, who, by then, has screen of RG, C, and LG.



CHICAGO CARDINALS TRIPLE WING

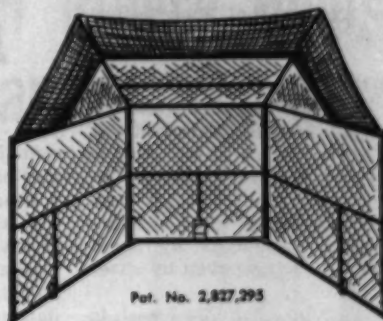
With FB behind QB, offense is double wing—enabling plunging FB and four receivers to quickly flood passing alleys. When FB sets up on outside, five receivers can get into secondary in few steps. Either HB can be in motion before snap to take hand-off. Defense is forced to spread wide and thin, becoming vulnerable to quick passes, to running QB, or slanting HB up middle.



NAVY ROLL-OUT PASS

Good example of zone-saturation. RE, FB, and WB flood defensive LH zone, with LH's swing and QB's drift adding pressure on left side. Rolling QB's prime target is FB.

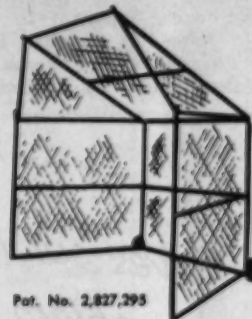
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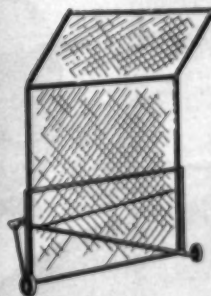
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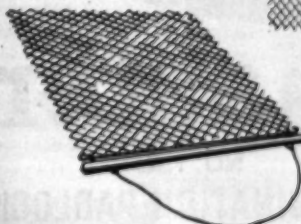
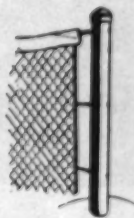
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material—the end product being an offensive system that took fullest advantage of his players' capabilities.

Since this isn't an unusual situation in high schools of limited enrollment, I feel an adaptation of this offense would be a great aid to them. It has excellent possibilities for the undermanned squad. A team of this nature cannot hope to overpower many opponents by sheer weight of numbers or even by sheer weight alone.

Thus, the type of offense I wish to present is based on the theory of forcing one's opponent to commit costly defensive mistakes periodically throughout the game. These mistakes must be seized upon

quickly by a team that has been alerted to them in practice.

Diag. 1 illustrates the basic formation of the high school variety of "Lonesome End" offense. It's immediately obvious that a "lonesome halfback" has been stationed as a flanker to the left. Neither player is required to enter the huddle at any time other than an official time-out period.

Under this system neither flanker need know, actually, whether the

play is a run or a pass. If these players are to give a convincing performance, they should expect a pass on every play.

Of course, most coaches will want to have definite signals relayed to them when a pass is coming. Thus, if you like, a signal is necessary only for a pass and for the pattern to be run. I find the former theory of expecting a pass every time merits great consideration.

Diag. 2 offers an illustration of left formation. Notice that the line unbalances for the left also. This tactic keeps all assignments exactly the same as those for right formation.

The simplicity of this offense in terms of remembering plays and formations should appeal to the coach who finds himself strapped for time in the development of an unseasoned team in the short space of three weeks.

Diag. 3 illustrates assignments on the "bread and butter" play—the ever-popular quick opener. The play is so basic and so simple to teach that some teams fail to exploit it fully simply because they give it up after failing to reap a sizable gain on the first few attempts.

Thus the basic philosophy of this offense begins with the most basic of plays. Let's say that the pass patterns shown in the diagram illustrate the prescribed paths for "Series One." Each time, therefore, that this series is indicated, the players will run their patterns in exactly the same manner.

If these boys can convince themselves that every play is a pass that could come to them, their actions will force the defenders to guard them closely. Thus, each should be able to get a true picture of his defender's capabilities and relay this information to his quarterback during a time-out.

The number of running plays in "Series One" is immaterial to any of the pass receivers, since they need only run their patterns effectively. A signal will alert them for the pass play.

By carefully choosing his running plays, the coach will have his passing offense nearly complete, for the idea is to have each running play equipped with a pass option. More will be said about this phase of the offense in the summary of the basic ideas and purposes of this style of attack.

Adapting the "Lonesome End"

(Continued from page 7)

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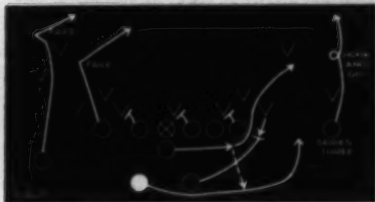
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Diag. 4 illustrates a trap play with "Series Two" patterns. Notice the different routes taken by the flankers in this pattern. Again it must be emphasized to these players that when this pattern is signalled, the routes must be strictly adhered to in order to receive maximum opportunities for defensive errors.



Notice, especially, that on this play the short-side end does the trapping. When a "Series Two" pass is called, this player runs the same route, pausing for one count at the trap area and then cutting to the right flat which we hope may be unguarded.

Diag. 5 offers an illustration of the "Series Three" pattern designed to take advantage of the running pass by the halfback or the roll-out by the quarterback.



Notice that our receivers set out in the "Series One" patterns. Our "Lonesome End" goes into the hook of "Series Two," waits for his defender to set himself for effective covering, then pivots away from that player and breaks straight downfield.

Our weak-side end heads for the defensive safety, gives a convincing fake toward the sideline, and breaks into the unprotected center. Our flanking back, who breaks sharply to the left in "Series Two," fakes the same pattern and breaks sharply into deep center to be in line with the passer.

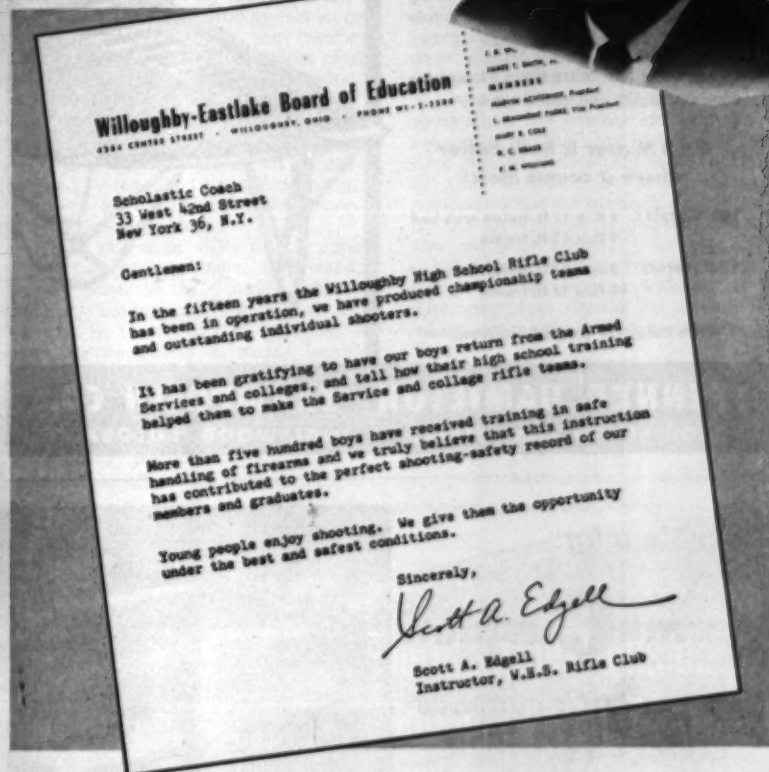
In summary, let's look at what this type of offense tries to accomplish for the under-manned team.

First, it's devised to force the heavier or more talented team to open up its defense. It's very difficult, if plenty of passes are thrown, to "jam up" the running game of this offense.

Secondly, this offense makes for a more effective passing attack. If the quarterback calls his series patterns effectively, his pass receivers will have ample opportunity to lull

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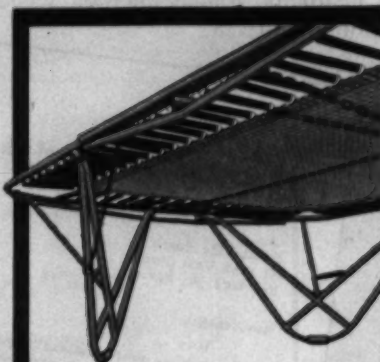
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their opponents into a sense of something less than urgency in covering. The chances, then, of selecting the proper moment to pass become excellent.

In order to get full mileage from this system, the coach should allow any of his flankers to signal for a pass when he's convinced he has his opponent "set up." In such a case, the player should also signal the pattern he chooses. Probably the best method of indicating such an attack would be during a time-out taken by signal from the player who wishes to receive the pass.

However, a single, simple signal indicating the pattern would do the job just as effectively. The signal by any of the flankers can be given even after the huddle is broken, since a simple automatic signal at the line by the quarterback will convert the run into the pass play which has identical backfield maneuvers.

Of course, the quarterback has the right to reject any signal from one of his flankers. But if he has confidence in his coach and his teammates, he probably will respect their estimate of the situation. A procedure such as this may prove an effective method of instilling a sense of teamwork and mutual respect in a squad that may otherwise be low in morale because of lack of outstanding material.

Finally, this system aims to force an opponent into a defensive error which can be seized upon immediately for profit. When such a situation occurs, and the offense successfully exploits the error, it can be a tremendous psychological lift for the team that has made their opponent literally "play into their hands."

Coaches of teams short on material realize that something has to be done to instill the desire so necessary for a team's morale.

Theory of Play

(Continued from page 38)

and sportsmanlike attitudes, they tend to follow in similar methods of atypical behavior.

This leads us by a natural transition to the third law, that of effect. Not only must the child practice what is right, but he must practice with satisfaction. To some extent, the learning of moral habits is beyond the control of play leaders and teachers, but they can provide the practice and help to bring the necessary satisfaction or annoyance as the case may demand.

One can call the child's attention to the need for a change in his ways, and then can give him an opportunity in

a stimulating environment to practice the desired quality in such a way that it will bring satisfaction. Many times in groups where there's a tendency toward dishonesty and disobedience to the rules of a game, the writer has given a brief, subtle discourse on the values of rules, boundary lines, etc., and then let the class play the same activity with no rules enforced.

It takes but a short time under these circumstances for the entire class to plead for the status quo. The analogy of driving an automobile in congested traffic is also brought out with its obvious complexities if no rules were observed.

Physical education redounds with opportunities for concomitant learnings. The football coach, for instance, who seeks to accomplish worthwhile ends in character development will find it necessary to think through and list the probable moral learnings, both desirable and undesirable, which may result from the football experience. Promptness, for example, is as much a learning in football as punting; courtesy to opponents as much as forward passing, and so with many other qualities of character.

The pin-pointing of the common elements in varying situations leads the child to generalize them, and with growing maturity to intellectualize the process. In this way moral attitudes learned in specific situations in play are transferable to other situations.

An illustration of this happened to the writer several years ago. A boy was cut from my basketball squad, and later asked for another chance; he was given it, and made the team. Later in life, whenever he was discouraged and apparently defeated by circumstances, he would recall the basketball experience and determine to keep trying. Children, however, need help in learning to generalize.

REWARDS AND PUNISHMENT

Thorndike places much emphasis on the value of some type of reward in a learning situation, and conversely, less emphasis on a punishment as conducive to learning. If the inexperienced teacher has never heard of this aspect of Thorndike's philosophy, it doesn't take him long to discover it.

It would take pages to discuss this topic properly. However, suffice it to say, that a proper sense of values in regard to the use of reward and punishment are of utmost importance in any learning incident.

Child and man alike are so constituted that praise, a form of reward, is sweet music to their ears. "Let satisfaction accompany the right" is a maxim in the theory of learning. We use sincere praise in many learning situations in physical education; verbal comments such as "nice try, Bob"; "good assist"; "that's the spirit, Jack"; are meaningful to most youngsters.

Another purposeful incentive in

group games is to always announce the winning team and with the correct score, awarding credit to other teams that finished second, third, etc.

In the same way that a feeling of satisfaction must accompany the right if learning is to take place, annoyance must accompany the wrong. Physical educators should be quick to bring annoyance to the offender when his acts are undesirable, and having brought annoyance, to point out that this unpleasant situation is an inevitable and unavoidable consequence of such action.

The author has found from experience that censure from a boy's own peers is much more effective in most cases than that of the teacher. However, punishment through imposing of specific penalties upon the offender is a last resort when other means are exhausted. If a teacher is admired and respected, actual punishment is seldom needed. A friendly talk is usually all that is called for. If more severe methods must be utilized, curtailment of the privileges of participating is the course to follow.

True leadership is positive, we learn early in our teacher-training days. The emphasis should be upon "do" whenever possible, not on the "negative."

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ADELPHI COLLEGE—Garden City, N. Y. Aug. 17-19. Directors, George Faherty (Adelphi College) and John Sipos, Huntington (N. Y.) H. S. Course: Basketball. Staff: to be announced. Tuition: \$20 (includes room and notes).

ALABAMA UNIV.—University, Ala. Aug. 3-6. Director, Paul Bryant. Courses: Football, Basketball. Staff: Paul Bryant, Frank Howard, Gomer Jones, Frank Mosley, Fred Schaus, Eugene Lambert. Tuition: free, except for out-of-state college coaches (\$25).

ALFRED UNIV.—Alfred, N. Y. June 29-July 17, July 20-Aug 7. Director, Dean Fred Gertz. Courses: Soccer, Basketball, Training (graduate level). Staff: P. O. Smith. Tuition: \$26 per credit hour.

ALL-AMERICAN CLINIC—Bemidji, Minn. June 15-17. Director, K. E. Wilson. Courses: Football, Basketball. Staff: Jack Mollenkopf, Vince Lombardi, Marv Helling, Forddy Anderson, others. Tuition: \$15. See adv. on p. 71.

ALL-AMERICAN FOOTBALL—Long Beach, Calif. June 29-July 2. Director, Don C. Richman, Box 37145, Los Angeles 37, Calif. Staff: Frank Broyles, Sid Gillman, Dale Hall, Hal Herring, Dave Nelson, Ara Parseghian. Tuition: \$30 (unit credit available). See adv. on p. 70.

ARIZONA COACHES ASSN.—Flagstaff, Ariz. Aug. 17-22. Director, Joe M. Garcia, 4647 W. Whitton, Phoenix, Ariz. Courses: Football, Basketball, Baseball, Tennis, Training. Staff: Bill Meek, Tex Winter, others. Tuition: \$18.50 (plus \$19 for room and board).

ARKANSAS COACHES ASSN.—Little Rock, Ark. Aug. 12-15. Director, Curtis King, Augusta, Ark. Courses: Football, Basketball. Staff: Gomer Jones, John Benington, others. Tuition: Non-members, \$5.

CALIFORNIA WORKSHOP—San Luis Obispo, Calif. Aug. 3-14. Director, Glenn E. DuBose, Napa College, Napa, Calif. Courses: Coaching and Physical Ed. Staff: Jack Curtice, George Ziegenfuss, Peyton Jordan, George Wolfman, others. Tuition: \$5 per week.

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COLBY COLLEGE—Waterville, Me. June 17-19. Director, Ellsworth W. Millett. Courses: Football, Basketball. Staff: Floyd Schwartzwalder, Adolph Rupp. Tuition: \$25. See adv. on p. 74.

COLORADO UNIV.—Boulder, Colo. June 12-July 17, July 20-Aug. 21. Director, Harry G. Carlson. Courses: Coaching, Phys Ed, Recreation. Staff: Entire University Staff plus others. Tuition: resident, \$35; non-resident, \$75 for each 5-week term.

CONCORDIA COLLEGE—Moorhead, Minn. Aug. 12-15. Director, J. M. Christiansen. Courses: Football, Basketball, Wrestling. Staff: Dave Nelson, Paul Dietzel, others. Tuition: \$15.

EASTERN FOOTBALL COACHES—Cold Spring Harbor, N. Y. June 12-13. Directors, Gordon MacDonald, Eastern Military Academy, Cold Spring, N. Y., and Dutch Ouderkick, West Babylon (N. Y.) H. S. Staff: Len Watters & Staff. Tuition: \$8 (includes meals) or \$15 (includes room and board).

EASTERN PENNA. COACHES ASSN.—East Stroudsburg, Pa. June 15-18. Director, Marty Baldwin, Box 205, East Stroudsburg, Pa. Courses: Football, Basketball, Training. Staff: Ben Martin, Frank Howard, Ray Eliot, John Stiegman, Glen Killinger, Forddy Anderson, Frank Kavanagh, others. Tuition: \$45 (includes room and board). See adv. on p. 72.

FLORIDA A & M—Tallahassee, Fla. June 8-12. Director, A. S. Gaither. Courses: Football, Basketball, Training. Staff: Frank Howard, Ray Eliot, Dave Nelson, Bob Woodruff, Gomer Jones, Andy Pilney, Perry Moss, J. B. McLendon, others. Tuition: \$17 or \$24.50 for one semester of credit in phys ed. See adv. on p. 71.

FLORIDA COACHES ASSN.—Gainesville, Fla. Aug. 3-6. Director, Carey E. McDonald, Ocala H. S., Ocala, Fla. Courses: Football, Basketball, Baseball, Track, Training. Staff: Dave Nelson, Joe Justice, Mike Long, others. Tuition: non-members or out-of-state, \$15.

FLORIDA STATE UNIV. FOOTBALL—Tallahassee, Fla. June 4-6. Director, Perry Moss. Staff: Forest Evashevski, Perry Moss, Ray Eliot, Frank Clemson. Tuition: \$20. See adv. on p. 72.

GLACIER PARK—East Glacier Park, Mont. July 1-2. Director, J. B. Temple. Courses: Football, Basketball. Staff: to be announced.

IDAHO COACHES ASSN.—Sun Valley, Ida. Aug. 10-14. Director, Jerry Dellinger, Jerome H. S., Jerome, Ida. Courses: Football, Basketball, Track, Wrestling, Equipment Care. Staff: Paul Dietzel, Tex Winter, others. Tuition: members, \$10; others, \$15. See adv. on p. 71.

ILLINOIS NORMAL-WESTERN ILLINOIS—Normal, Ill. June 9-10. Director, Howard J. Hancock, Illinois Normal U., Normal, Ill. Courses: Football, Basketball, others. Staff: Jack Mollenkopf, others. Tuition: free.

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Circle Tower, Indianapolis, Ind. Courses:
Football, Basketball. Staff: Pete Elliott,
Tex Winter, others. Tuition: \$1, state;
\$10, others.

INDIANA BASKETBALL—New Castle, Ind.
July 30-Aug. 1. Director, Cliff Wells,
Tulane University, New Orleans, La. Staff:
Cliff Wells, others. Tuition: \$10 (includes
notes).

KANSAS ACTIVITIES ASSN.—Wichita, Kan.
Aug. 17-20. Director, C. H. Kopelk, 1300
Topeka Blvd., Topeka, Kan. Courses: Foot-
ball, Basketball, Track, Baseball, Training.
Staff: Dal Ward, Forddy Anderson, others.
Tuition: \$10.

LOUISIANA COACHES ASSN.—Baton
Rouge, La. Aug. 3-7. Director, Woody
Turner, 151 Charles Ave., Shreveport, La.
Courses: Football, Basketball, Track. Staff:
Paul Dietzel, others. Tuition: \$3, members;
\$5, non-members; \$10, out of state.

MICHIGAN STATE UNIV.—East Lansing,
Mich. Apr. 30-May 2. Director, Burt
Smith. Course: Football. Staff: Duffy
Daugherty, others. Tuition: \$3. See adv.
on p. 70.

**MILLERSVILLE TEACHERS COLLEGE FOOT-
BALL**—Millersville, Pa. May 2. Directors,
George A. Katchmer and Raymond J.
Runkle. Staff: Earle Edwards, Jim Bonder,
others. Tuition: registration fee of 50¢.

MISSISSIPPI COACHES ASSN.—Jackson,
Miss. Aug. 4-7. Director, Sammy Bartling,
Millsaps College, Jackson, Miss. Courses:
Football, Basketball, Training. Staff: Bow-
den Wyatt, Gomer Jones, Hank Iba,
others. Tuition: \$10, members; \$15, others.

MONTANA STATE COLLEGE—Bozeman,
Mont. June 8-10. Director, Gene Bourdet.
Courses: Football, Basketball, Training.
Staff: Ara Parseghian, Herb Agocs, Keith
Lambert, others. Tuition: \$5.

NEVADA UNIV.—Reno, Nev. June 15-19.
Refer to Ath. Dept. Courses: Football,
Basketball, Training. Staff: Forest Eva-
shevski, Tex Winter. Tuition: \$20, state
resident; \$24, others.

NEW HAMPSHIRE ATHLETIC ASSN.—
Exeter, N. H. June 21-23. Director, Walter
A. Smith, 121 No. State St., Concord, N. H.
Courses: Football, Basketball, Baseball,
Soccer. Staff: Floyd Schwartzwalder, Bob
Blackman, Hank Iba, Taps Gallagher,
Ralph Lapointe, Roy Dath. Tuition: \$22.50,
instate; \$30, out of state (includes room
and board); \$17.50, tuition only. See
adv. on p. 72.

NEW MEXICO COACHES—Albuquerque,
N. M. Aug. 2-8. Director, C. H. (Doc)
Ledbetter, 1213 Princeton Dr. S.E., Al-
buquerque, N. M. Courses: Football, Bas-
ketball, Baseball, Track, Training. Staff:
Bob Blackman, Elvan George, Forddy
Anderson, Polk Robison, others. Tuition:
members, \$10; non-members, \$15.

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HANK IBA

Oklahoma State Univ., BASKETBALL

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Niagara University, BASKETBALL

RALPH LAPOINTE

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ROY DATH

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NORTHERN ILLINOIS UNIV.—DeKalb, Ill. June 24-25. Director, George G. Evans. Courses: Football, Basketball, Baseball, Track. Staff: Milt Bruhn, Eddie Hickey, others. Tuition: free.

NORTHERN INDIANA BASKETBALL—South Bend, Ind. July 16-17. Director, Jim Tansy, 917 W. Mishawaka Ave., Mishawaka, Ind. Staff: John Jordan, Bill Rohr, Elmer McCall, others. Tuition: \$10.

OHIO UNIV.—Athens, O. Director, C. C. Widdoes. One-week clinics—Football (June 15-19), Basketball (June 22-26), Baseball (June 29-July 3), Track (July 6-10), Therapy (July 13-17). Staff: Bill Hess, Jim Snyder, Bob Wren, others. Tuition: \$12 per credit hour, residents; \$25 per credit hour, out-of-state.

OKLAHOMA COACHES ASSN.—Tulsa, Okla. Aug. 9-13. Director, Leon Bruner, 3513 N. W. 24, Oklahoma City, Okla. Courses: Football, Basketball, Baseball. Staff: Darrell Royal, Frank Broyles, Jess Thompson, others. Tuition: \$10.

OREGON UNIV.—Eugene, Ore. June 15-20. Director, Arthur A. Esslinger. Courses: Football, Basketball, Baseball, Track, Wrestling, Training. Staff: Jack Curtice, Don Kirsch, others. Tuition: \$18.

ORIGINAL CLINIC—Superior, Wis. July 15-18. Director, Mertz Mortorelli, Wisconsin State College, Superior, Wis. Courses: Football, Basketball, Training. Staff: Ara Parseghian, Milt Bruhn, Adolph Rupp, others. Tuition: \$15.

PRAIRIE VIEW A & M—Prairie View, Tex. July 14-16. Director, W. J. Nicks. Courses: Football, Basketball. Staff: to be announced. Tuition: \$10.

SOUTH CAROLINA COACHES ASSN.—Columbia, S. C. Aug. 2-7. Director, Harry Hedgepath, 1623 Harrington St., Newberry, S. C. Courses: Football, Basketball. Staff: Darrell Royal, Ben Martin, Tex Winter. Tuition: members, \$5; non-members \$10 one course, \$15 for both.

SOUTH DAKOTA ATHLETIC ASSN.—Huron, S. D. Aug. 17-19. Director, R. M. Walseth, Box 203, Pierre, S. D. Courses: Football (11, 8, 6), Basketball. Staff: R. M. Walseth, Jr., others. Tuition: free.

SOUTHERN ILLINOIS UNIV.—Carbondale, Ill. Aug. 26-27. Director, Andrew T. Vaughan. Courses: Football, Basketball. Staff: Cliff Speegle, Frank McGuire. Tuition: non-members, \$10.

SOUTHWEST MISSOURI ST. COLL.—Springfield, Mo. July 9-10. Director, Aldo Sebben. Courses: Football, Basketball, Training. Staff: to be announced. Tuition: \$5.

SPALDING CLINIC—Monticello, N. Y. June 22-25. Directors, Haskell Cohen and Clair Bee, Publicity Enterprises, 8022 Empire State Bldg., New York 1, N. Y. Courses: Football, Basketball. Staff: Dale Hall, Dave Nelson, Clair Bee, Adolph Rupp, Dudley Moore, Bill Rohr, others. Tuition: free. See adv. on p. 70.



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TENNESSEE ATHLETIC ASSN.—Cookeville, Tenn. July 21-24. Director, Wilburn Tucker, Tennessee Tech, Cookeville, Tenn. Courses: Football, Basketball, Baseball, Track, Training, Girls Basketball. Staff: Ara Parseghian, Dan Devine, Cliff Wells, others. Tuition: free (room and board, \$9.50).

TEXAS COACHES ASSN.—Fort Worth, Tex. Aug. 2-7. Director, L. W. McConachie, Perry Brooks Bldg., Austin 1, Tex. Courses: Football, Basketball, Track, Training. Staff: Paul Dietzel, Abe Martin, Jim Myers, Buster Brannon, Bob Rogers, others. Tuition: \$15.

UTAH STATE UNIV.—Logan, Utah. June 8-13. Director, H. B. Hunsaker. Courses: Football, Basketball, Track, Training. Staff: Dan Devine, Forddy Anderson, others. Tuition: \$20. See adv. on p. 72.

VIRGINIA STATE COLL.—Petersburg, Va. June 22-26. Director, William W. Lawson. Courses: Football, Basketball. Staff: Jerry Burns, Bill Gunlock. Tuition: \$15.

WILDWOOD BASKETBALL—Wildwood Crest, N. J. June 5-7. Director, Bill Esher, 5605 Seaview Ave., Wildwood Crest, N. J. Staff: Jack Ramsay, Paul Arizin, Sam Cozen, others. Tuition: \$25 (includes room). See adv. on p. 71.

WISCONSIN COACHES ASSN.—Madison, Wis. Aug. 3-7. Director, Hal Metzen, 1623 Jefferson St., Madison, Wis. Courses: Football, Basketball, Baseball, Track, Wrestling, Tennis. Staff: Milt Bruhn, Bud Foster, others. Tuition: members, \$1; guests, \$10.

WISCONSIN STATE COLL.—River Falls, Wis. June 11-12. Director, Fran Polasfoot. Courses: Football, Basketball. Staff: Phil Dickens, Eddie Hickey. Tuition: \$15.

WYOMING COACHES ASSN.—Casper, Wyo. June 5-6. Director, Stan Kouris, Reliance, Wyo. Courses: Football, Basketball, Training. Staff: Jack Curtice, others. Tuition: state, \$5; others, \$10.

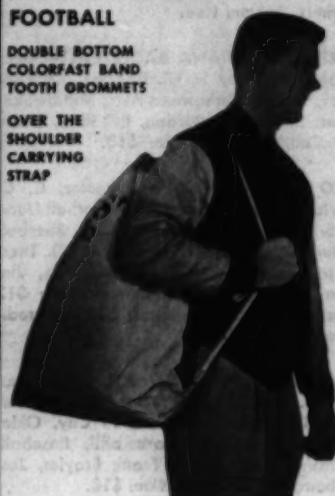
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SAVES TIME AND
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Send to Dept. 5 for booklet on four other models
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Base Running

(Continued from page 14)

the pivot is on the left foot and the first step is with the right foot.

ON YOUR WAY. A baseball field is laid out in the form of a diamond—so don't circle the bases—RUN bases. Save time and distance making the turn at 2B, or at 3B, either by the cross-over or push method.

Saving one stride or one second frequently means the player is safe instead of out. Take a look at home plate. When you drop your bat and leave there, get back as quickly as you can.

POINTERS FOR THE RUNNER

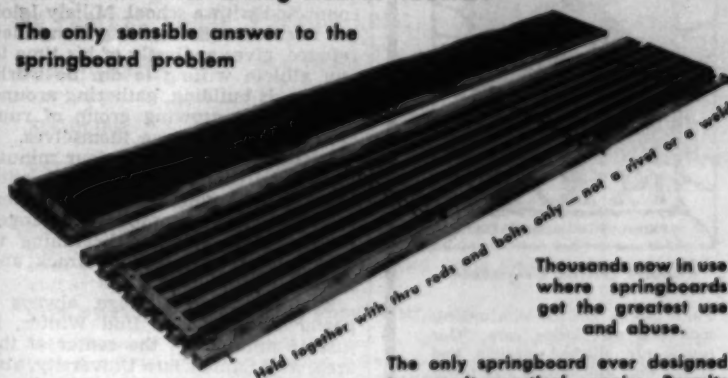
1. Develop an aggressive base-running attitude.
2. Run out every play.
3. Judge distance and position of fielders.
4. Know the quality of the catcher's and fielders' arms.
5. Learn to get a big lead.
6. Study the pitchers' moves and personal mannerisms.
7. Get a reputation as a good baserunner. Help the batter behind you.
8. Be adventuresome—take a lead—draw the throw.
9. Alertness, aggressiveness, and desire to steal are important to a good baserunner.
10. Know where the ball is every second.
11. Keep pressing for every advantage.
12. Take off at full speed.
13. Know the situation, the score, the count on the batter, the outs in the inning, the strong and weak throwing arms of the opposing fielders, and have an instinct for taking a chance.
14. Run in a straight line.
15. Make your turn at each base ready to start for the next on out-field balls.
16. When you drop your bat at home plate and leave there, get back as quickly as you can.
17. Touch all bases.
18. Know the tactical situation at all times.
19. Run out all hits—let the coaches tell you if the ball is foul.
20. Watch the pitchers while on the bench to learn their motions and system.
21. Pivot properly when running bases to reduce the distance that must be travelled.
22. Always slide when in doubt, and when a slide is started don't change your mind. To do so may cause you a serious accident.

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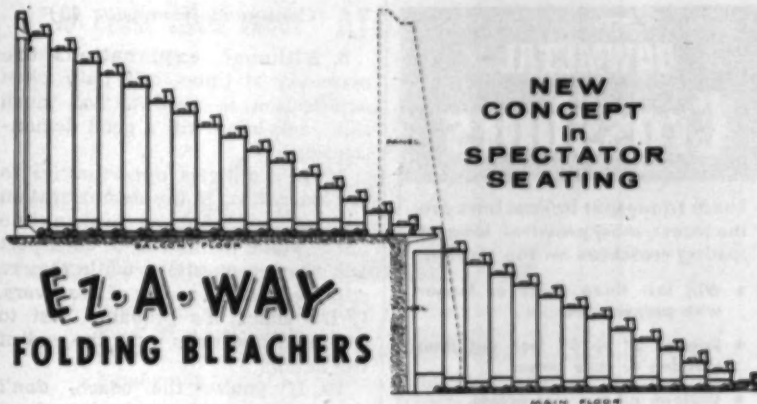
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- Continuous arrangement of seats from the main floor to top of the balcony . . . without jog or interruption.
- Any number of rows and length of row.
- Can be furnished in DeLuxe opera style seats.



Here is a new concept in bleacher design for maximum spectator seating. In addition to its flexibility it has beauty in appearance. For example, the illustration shows what at first glance is a 31 row high installation . . . yet there are 13 rows on the main floor and the remainder go on up to the back of the balcony without jog or interruption.

Spectators can enter the bleachers from the balcony by use of the 34 inch walkway along the front of the balcony sections, designed also to provide easy exit from the balcony. For capacity crowds the walkway can be converted to additional seats, so that all the balcony space becomes spectator seating.

When closed there is a continuous face so that on occasions only the bleachers on the main floor need be extended. These continuous design EZ-A-WAY Bleachers may be equipped with the OMEGA drive unit for simple, easy operation.

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Transportation charges extra

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Year 'Round Track

(Continued from page 30)

Santa Clara Valley Youth Village. Easing into track a few years ago, the Village now finds itself with the only full-time track coach in the U.S. not connected with a school. Mihaly Igloi, the talented and charming Hungarian refugee, gives endlessly of his time to any athlete willing to do the work. He, too, is building, gathering around him an ever-growing group of runners anxious to prove themselves.

Laszlo Tabori, the sub-four minute miler who came from Hungary with Igloi, is the number one performer. But there are a number of younger home-grown who are beginning to help put the area on the track and field map.

San Jose State College, always a power under Coach Bud Winter, is just 15 miles from the center of the area. And Santa Clara University, also a few miles distant, is starting track under former world 440 world holder, Jim Lea.

All of which means there's plenty of interest on all levels, from the high schools through colleges and universities, to the clubs. Our unique "program" is geared to take care of the needs of them all. As their interest grows, the program grows.

Demonstrations

(Continued from page 43)

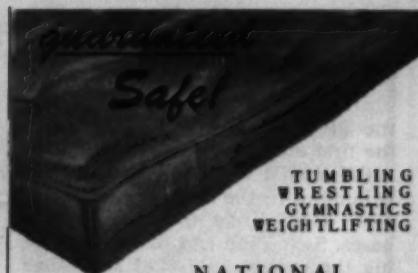
8. Although explanations are necessary at times, talk only when explanation is needed. Too much talk can almost kill a good demonstration.

9. Give athletes opportunities to ask questions. If the demonstration is long and must be broken into parts, pause at the end of each part and answer questions while they're still fresh in the minds of observers. If it's short, it's probably best to withhold questions until the end of the action.

10. If you're the coach, don't demonstrate unless you can perform with more skill than anyone on the team and unless you're in good enough shape to complete the action in a normal manner.

Many successful coaches never attempt to demonstrate skills, but do their best coaching by explaining the action while highly skilled members of their team perform. Or they call in younger men who are recognized experts to do the demonstrating for them.

11. Use a positive approach when demonstrating. That is, show the correct rather than the wrong method of how something should be done. Some coaches, however,



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like to demonstrate both the right and the wrong methods, then point out the differences in them. In fact, it may be all right at times to show an athlete how he performed, even if he executed the skill poorly, and follow with a correct demonstration.

Needless to say, too much pointing out what's wrong instead of stressing what's right might result in an athlete feeling that he's being picked on, that an example is being made of him, and that the coach is unjust. Therefore, the coach must use reason in negative teaching, whether it be demonstration or explanation.

Discus Mechanics

(Continued from page 46)

The pronounced lifting effort of the arm, originating in the deltoid muscle, is absolutely necessary to get a good projection angle while at the same time keeping the face of the discus down, or closed, as we sometimes say. The tendency of most throwers is merely to swing their arm in a circle. This action results in a flat trajectory and, in some cases, an optimal angle of discus tilt.

When most discus throwers attempt to throw high, they usually open up the face of the discus because they rotate the wrist laterally, and the discus then "stalls out."

The timing of this movement, which will take much practice, will always be very critical. It's easy to get a high angle of projection by maintaining a firm grip on the discus until the last possible moment but, as we see here, the thrower **MUST LET THE DISCUS GET AWAY FROM HIM** at point CY.

The principal control in this action will stem from the wrist-thumb action coupled to a lifting action originating in the shoulder. The general tendency is for throwers to let the discus go too soon. In throwing we must always keep uppermost in mind that we're resolving a purely rotary motion into an angular force under conditions of careful control.

The problem is actually much more complex with the discus than the hammer, where the aerodynamic factor is of little or no consequence. We must utilize our aerodynamic forces to a maximum, but we must not sacrifice a good projection angle just to get aerodynamic efficiency.

Conversely, if we sacrifice aerodynamic efficiency, we can nullify all the benefits achieved in a perfect take-off angle.

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- TRY ONOX 60 DAYS AT OUR RISK If not completely satisfied, you owe us nothing. Write for full details and ask for:
- FREE FOLDER: Facts on Athlete's Foot including medical opinions from *Archives of Dermatology and Syphilology.

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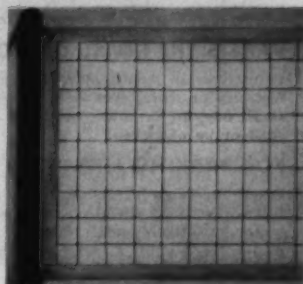
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Daytons are practically indestructible—ideal for schools and playgrounds. Steel strings and tubular steel frames are not affected by climatic changes. No covers or presses are needed to protect them. They won't warp, splinter, rot or sag.

It will pay you to investigate now. See them at your local dealer's or write direct to factory for more information.

DAYTON RACQUET COMPANY
84- Albright St. Arcanum, Ohio

**Dayton
STEEL RACQUETS**



FREE

Rules and
court layouts
for badminton
or tennis are
yours for the
asking.

Tennis Defense

(Continued from page 18)

baseline, the target should be decreased in size.

TYPE FOUR

To pull the opposition away from his central area in the court, we have found the use of sharp, cross-court drives very effective.

For maximum results, we suggest that you coach your pupil to take services on the rise and make returns at angles well inside the adversary's forecourt.

Employ a moderate follow-through on this stroke and contact the ball at a position well ahead of the body to produce your desired angle.

It will take considerable practice to develop the ability to hit the oval on the rise. Naturally, instruct the boy to stand in closer and begin his swing earlier.

Timing is particularly important, and he must be told to watch the ball more carefully than ever because it reaches him at a faster speed than a ball taken at the height of the bounce or on the way down.

The shorter angle he can obtain on his return, the more effective will this become in hurrying the power player and forcing him into numerous errors.

TYPE FIVE

Method No. 5 is simply a combination of one, two and three. It's recommended for the more prolific player and requires considerable skill. It's helpful for several reasons.

First, it allows the defense to exploit any physical or mechanical weakness in the attack of a power player.

Second, it provides the benefits of more than one method and consequently offers a greater opportunity to open a crevice in the big game.

Finally, it incorporates the element of surprise since it's always possible that the power player may adjust his strokes to accommodate any single weakness.

If he realizes that the ball may be directed down the line or at his feet—and that these can be varied with lobs, he won't be able to set himself for any specific shot.

Only through steady and continuous sharp-shooting can we open holes in the big game—only through the concerted effort of coaches and players can we produce an effective defense against power tennis!

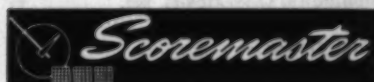
AUTOMOBILES and SCHOLARSHIP

DO automobiles and scholarship mix? No, says Madison H. S., Rexburg, Ida. A study of a typical senior class revealed the following:

- No straight A student had the use of a car.
- Only 15% of the B students drove a car to school.
- Of C students, 41% drove a car to school.
- Of D students, 71% drove to school.
- Of E students, 83% drove to school.

As a result of this study, Rexburg's Board of Education adopted the following resolution:

1. Students who drive to school must make written application showing the reason or need to drive.
2. Students given permission to drive to school must park their cars in designated areas.
3. Students failing to comply with the rules will have their student permits revoked. If they persist in non-compliance, they'll be subject to expulsion from school.



ELECTRIC SCOREBOARDS

Did your football and basketball scoreboards operate efficiently the past seasons? Or were the fans "in the dark" part of the time due to timing inaccuracies and poor readability? Now is the time to plan on installing the best boards money can buy.

For literature and prices write

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2215 Lake St.

Niles, Mich.

SOLVE BUDGET PROBLEMS

Shop from this **FREE**

Stretch your budget and provide a greater array of quality supplies for your gymnasium with this value-laden catalog as your guide. **TRADE-IN YOUR OLD EQUIPMENT** on finest apparatus available. Send post card to:

GYMNASTIC CATALOG



Department H

GYMNASTIC SUPPLY CO.

250 West 6th St. San Pedro, Calif.

MASTER COUPON

To obtain free literature and sample goods, carefully check items desired and mail coupon directly to Scholastic Coach, Advertising Dept., 33 W. 42 St., New York 36, N. Y. Numbers in parentheses denote pages on which the advertisement may be found.

AALCO MFG. (56)

- ☐ Catalog of Complete Sports Line

ADIRONDACK BATS (33)

- ☐ Brochure on Northern White Ash Bat Line

AMERICAN PLAYGROUND DEVICE (14)

- ☐ Catalog of Dressing Room Equipment
☐ Catalog of Pool Equip.

AMERICAN TRAMPOLINE

- (Inside Back Cover)
☐ Catalog of American Line of Trampolines

AMERICAN WIRE (80)

- ☐ Folder on Locker Baskets and Uniform Hanger

AUDIO EQUIPMENT (76)

- ☐ Brochure on Transistorized Powered Portable Megaphone

AUSTIN FENCE (63)

- ☐ Catalog on Athletic Field and Gym Equipment

BEHRENS MFG. (62)

- ☐ Catalog of Scoremaster Water Carrier

BERLIN CHAPMAN (75)

- ☐ Information on Ez-A-Way Folding Bleachers

BIKE WEB (3, 25, 37, 49)

- ☐ Information on Trainer's Supplies

BROWN, M. D. (79)

- ☐ Catalog of Scoremaster Electric Scoreboards

BUCK MFG. (75)

- ☐ Information on Multi-Unit Aluminum Diving Board

COACHING SCHOOLS

- Further information on
☐ All-American Coaching Clinic (71)
☐ All-American Football (70)
☐ Colby Coll. (74)
☐ Eastern Penna. (72)
☐ Florida A & M (71)
☐ Florida St. U. (72)
☐ Idaho Coaches (71)
☐ Michigan St. U. (70)
☐ New Hampshire (72)
☐ Spalding Clinic (70)
☐ Utah St. U. (72)
☐ Wildwood Basketball (71)

COSOM (35)

- ☐ Booklet, "26 New Games for Safe Indoor and Outdoor Play"

DAKON (58)

- ☐ Information on Whirlpool Hydrotherapy Bath

DAYTON RACQUET (78)

- ☐ Badminton or Tennis Rules and Court Layouts

DUCOMMUN, M. (38)

- ☐ Catalog of Complete Line of Stop Watches

DU PONT (47)

- ☐ Information on Fast Film Processing Service

FENNER-HAMILTON (68)

- ☐ Catalog on Gym-Master Line of Trampolines

GENERAL ATHLETIC (60)

- ☐ Literature on Stretch Football Uniforms

GYMNASTIC SUPPLY (79)

- ☐ Catalog on Gymnastic Apparatus

H. & R. MFG. (74)

- ☐ Booklet on Dry Line Markers for All Sports

HILLERICH & BRADSBY (63)

- ☐ Famous Slugger Year Book
☐ 1959 Softball Rules
☐ Louisville Slugger Catalog
☐ Grand Slam Golf Club Catalog

HILLYARD CHEMICAL (4)

- ☐ Scouting & Scoring Book
☐ Literature on Trophy Finish

HOUSE OF HARTER (73)

- ☐ Information on Silk Satin Track Award Ribbons

HUNTINGTON LABS. (23)

- ☐ 1959-60 Basketball Coaches Digest (free to coaches, 50¢ to others)

HUSSEY MFG. (73)

- ☐ Catalog of Closed Deck Gym Seating

IVORY SYSTEM

- (Back Cover)
☐ Monthly Bulletin, "The Observer"

JAYPRO ATH. SUPPLY (76)

- Catalog on
☐ Steel Chain Nets
☐ Tetherball Sets
☐ Aluminum Standards

JOHNSON & JOHNSON (39-42)

- ☐ Literature on Complete Line of Training Aids

K. & P. ATHLETIC (76)

- ☐ Information on Dow-metal Crossbars

KRETCHMER (58)

- ☐ Booklet, "Suggested Ways of Feeding Wheat Cerm to Athletes in Training"

LINEN THREAD (78)

- ☐ Catalog on Complete Line of Nets for All Sports

MASTER LOCK (66)

- ☐ Literature on Combination Padlocks

MEDART PRODUCTS (17)

- Catalogs on
☐ Power-Operated Gym Seats
☐ Basketball Backstops and Scoreboards
☐ Locker Room Equipment
☐ Gymnasium Apparatus

NADEN (74)

- Electric Scoreboards and Timers
☐ Baseball Catalog
☐ Basketball Catalog
☐ Football Catalog

NATIONAL SPORTS (74)

- ☐ Price Circular on Jim-Flex Gym Mats
☐ Circular on Floor and Wall Mats and Covers, Baseball Bases

NEW EQUIPMENT (48)

- Further information on
☐ Football Face Guard
☐ Warm-Up Suits
☐ Mercury Vapor Floodlight
☐ Training Spot
☐ Golfing Gizmo
☐ Parallel Bars

SEE PAGE 80 FOR OTHER LISTINGS AND FORM FOR SIGNATURE

LOCKER BASKETS

AND

SPACE SAVING UNIFORM HANGERS

All welded steel wire. Molten Metal dipped (tin alloy) after fabrication to insure maximum corrosion resistance. Available in sizes to meet your locker room needs. Write for descriptive literature and school prices.

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MASTER COUPON

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(Numbers in parentheses denote page
on which advertisement may be found)

NISSEN TRAMPOLINE (19)

- ☐ Free Lesson Plans
- ☐ Catalog
- (See adv. for free film offer)

OCEAN POOL (69)

- ☐ Catalog on Swim and Pool Equipment

ONOX (77)

- ☐ Folder on Athlete's Foot

PENNA. ATH. PROD. (15)

- ☐ Catalog of Rubber-Constructed Balls

PHARMA-CRAFT (64)

- ☐ Information on Ting for Athlete's Foot

PLAYTIME EQUIPMENT (18)

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POCONO FABRICATORS (27)

- ☐ Catalog of Adjustable Football Face Guard

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- Full Color Catalog on
- ☐ Playmaster Coaching Aids
- ☐ Record-Master Hall-of-Fame Displays
- ☐ Eroso Posters and Charts
- ☐ Score-King Magnetic Scoreboard
- ☐ Spot Awards Trophies and Cups

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- ☐ Information on Polvanite Fiberless Football Pads
- ☐ Catalog of Polvanite Gym and Wrestling Mats

RALEIGH RECOND. (61)

- ☐ Information on Quality Reconditioning Service

RAWLINGS (1)

- ☐ Catalog of Football Equipment

REMINGTON ARMS (67)

- ☐ Literature on Operation of a Rifle Club

RICHARDS-WILCOX (59)

- ☐ Catalog of Fold-R-Way Aluminum Partitions

RIDDELL, JOHN T.

- (Inside Front Cover)
- ☐ Information on Quality Line of Football Equipment

ROBBINS FLOORING (68)

- ☐ Details on Perma Cushion Rock Maple Gym Floor

SCHOOL-AID (26)

- ☐ List of Coaching Aids

SNITZ MFG. (74)

- ☐ Information on Tote (Athletic Carrying) Bags

SPALDING & BROS. (31)

- ☐ Catalog

SPANJIAN (74, 76, 78)

- ☐ 1959 Football Catalog

SPOT-BILT (55)

- ☐ Catalog of Athletic Shoes

SWEET, H. C. (77)

- ☐ Information on Multi-Purpose Line Marker

UniMac (2)

- ☐ Information on School Laundry Equipment

UNIVERSAL BLEACHER (60)

- ☐ Catalog of Portable Steel Bleachers

WESTERN CINE SERV. (56)

- ☐ Information on Speedy Film Processing

WIDE-LITE (51)

- ☐ Information on High Output Wide-Lites

WILSON (6)

- ☐ Catalog

WILTON (63)

- ☐ Catalog of Uniforms

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(Principal, coach, athletic director, physical director)

SCHOOL _____ ENROLLMENT _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

No coupon honored unless position is stated

April 1959

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AMERICAN TRAMPOLINES
WITH ALL OTHERS...AND
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HEAVY DUTY BED of 100% nylon, 1½" or 1" webbing, stitched lengthwise under tension on American's precision looms. Double-thick cotton duck or nylon canvas beds also available. Stronger rubber cables perform better . . . last longer.



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RIGID FRAME features many engineering firsts, including **SPACED DUAL** side and end rails for greater strength . . . flat double-action steel hinges and exclusive hanger bar system for greater safety. **NEW JET-BLACK FRAME** gives performer constant, clear-cut check on his position over the trampoline.



American Trampolines Meet All A. A. U. and N. C. A. A. Specifications And Are Guaranteed To Be of the Highest Quality



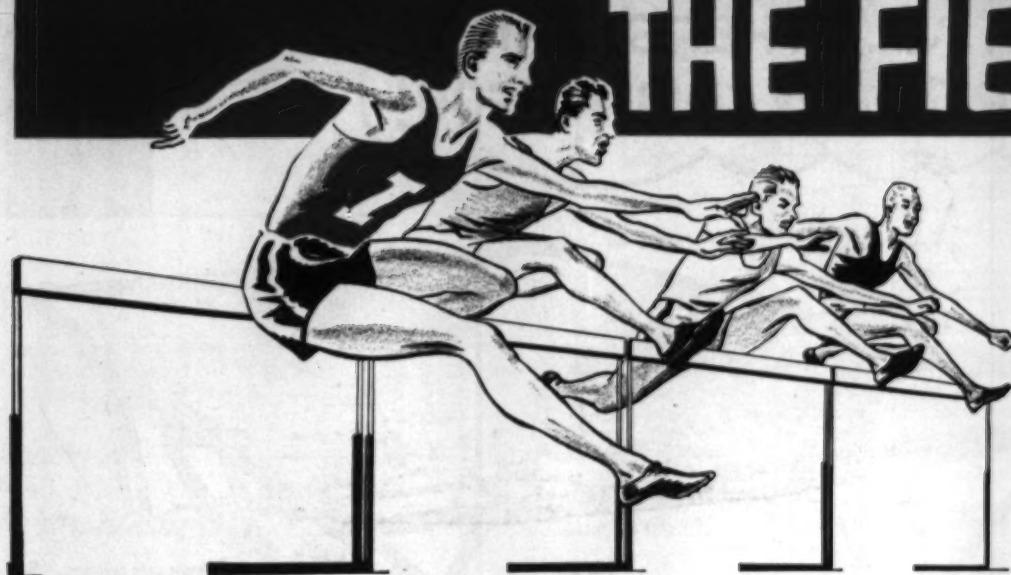
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More economical, non-folding trampolines for general outdoor use are also manufactured by American. Ideal for backyards, camps, playgrounds, etc. American also offers the most advanced line of DIVE-O-TRAMPS for added swimming fun.

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